

# AMERICAN RAILROAD JOURNAL.

## STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED IN 1831.

PUBLISHED WEEKLY BY J. H. SCHULTZ & CO., AT NO. 9 SPRUCE ST., NEW-YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. XI., No. 16.]

SATURDAY, APRIL 21, 1855.

[WHOLE NO. 992, VOL. XXVIII.

MESSRS. ALGAR & STREET, No. 11 Clements Lane, Lombard Street, LONDON, are the authorised European Agents for the *Journal*.

### PRINCIPAL CONTENTS.

Evansville, Indianapolis and Cleveland Straight	
Line R. R.	241
Knoxville and Kentucky Railroad	242
Florida Railroad	242
Pacific Railroad Surveys	242
Columbus and Hocking Valley Railroad	245
Virginia and Tennessee Railroad	253, 245
Madison and Indianapolis Railroad	246
Bellefontaine and Indiana Railroad	247
Beloit, Monroe, and Toledo Railroad	248
Ohio and Mississippi Railroad	248
Time-Table of Roads running West from New York	249
Baltimore and Ohio Railroad	249
East Tennessee and Georgia Railroad	249
Journal of Railroad Law	251
Railroad Earnings	262
Locomotives in Cities	262
Indianapolis and Bellefontaine Railroad	253
Railroad Map of the United States for the World's Fair	254

### American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., NO. 9 SPRUCE ST.

New York, Saturday, April 21, 1855.

### Evansville, Indianapolis and Cleveland Straight Line Railroad.

Mr. O. H. Smith, President of the Evansville, Indianapolis and Cleveland Straight Line Railroad takes exception to the article upon the above road in the Journal of March 31st, in which we objected to the sale of certain *Real Estate Bonds* issued by his company, and which he is attempting to dispose of in this quarter, on the ground—

1st, that the company were attempting to borrow for the *first* estimates for work done on the road, on bonds not secured by a mortgage on the road.

2nd, that the road would not, at a cost of \$40,000 per mile, pay, if constructed.

3rd, that the project was a *speculation*, having been put under contract at \$30,000 per mile, although its estimated cost was only \$15,000 per mile, which was undoubtedly a liberal allowance.

4th, that a portion of its line was parallel to a

road already built through the instrumentality of Mr. Smith. As the former line, according to himself, would be 8 miles the shortest, its construction would destroy the value of the other in which he had induced the public to invest on the representation that it was the *best route* between the termini.

(1st) The question of the propriety of issuing bonds before a road is even surveyed, or put under contract, we refer to the public, to whom, in the present instance, they are offered. The company was organized in 1853. In December following, some time before the road was put under contract, a batch of *real estate* bonds were issued, which Mr. Smith has been attempting to sell, to pay, we presume, the early estimates for construction. These bonds he brings to the Eastern States for sale. We object on the ground, that where the *first* estimates cannot be paid by the money of the people living upon the line of the road, it is not a project in which people living at a *distance* can safely invest.

(2nd.) With regard to the probable productivity of the road we cannot see how such a project can be profitable at a cost of \$40,000 per mile, while roads upon vastly better routes in the State, and costing only about one-half the above sum per mile, are hardly able to pay 7 per cent., and others are able to pay but little more than running expenses. For a very considerable portion of its distance, Mr. Smith's road is in the immediate vicinity of the Wabash and Erie Canal. This, taken in connection with the fact that the south-western is one of the poorest and most sparsely settled portions of the State, warrants us, we think, in saying that at a cost of \$40,000 per mile it cannot pay.

(3rd.) From the fact that items which were estimated by Mr. Smith to cost *fifteen thousand dollars*, per mile, were put under contract at *thirty thousand* per mile, we stated the scheme to be, in our opinion, a *speculation*. This Mr. Smith denies, and states that his estimate of \$15,000 per mile "was a mere *guess*, exclusive of buildings, and that the contract for *thirty thousand* dollars included buildings, machine-shops, &c., the whole payable in stocks and bonds at par." Let us look at this *guess* a little.

In his address to the company, under date of May 12th, 1853, Mr. Smith states that "from my knowledge of the general character of the country through which it will run, I estimate the average cost of the line, allowing for the increased price of labor and iron, up to the rolling machinery, including everything at *fifteen thousand dollars* per mile, constructed in the most *substantial* manner," &c. If *everything*, does not include buildings, we should like to know what it does include. That these *were* included is fully proved by his estimated cost of the road-bed, bridging, wooden superstructure, masonry, &c. In reference to these matters he says, on page 12 of his address:—"To prepare the road for the iron, including *everything*, it will not require over *five thousand dollars* per mile, or \$750,000 for 150 miles between Evansville and Indianapolis; nor over *three thousand* per mile, or \$225,000, for the section of 75 miles, from Indianapolis to *Union*." Deducting *five thousand* the estimate for grading, bridging, &c., &c., would leave *ten thousand dollars* per mile for buildings, and machine shops, or \$1,500,000 for the lower division of 150 miles; a pretty fair allowance, we should think, and an amount *five times* greater than would be required!

But Mr. Smith tells us his estimate was a *guess*. Let us see how this *guess* was verified by actual surveys.

In his statement under date of December 24th, 1853, nearly eight months subsequent to that just quoted from, he says—"Mr. Moore, our Chief Engineer is progressing finely with the *permanent location* of the road, having commenced at the Ohio river at Evansville. The result thus far is highly gratifying. A very favorable line is obtained at *nearly 50 per cent. less of estimated cost than was expected*; and from the lights now before me, I anticipate equally favorable results as the permanent location of the line progresses."

Mr. Smith attempts to excuse the placing of his road under contract at \$30,000 per mile, or twice the estimated cost, on the ground that this estimate was a mere *guess* made in *advance* of surveys. But he forgot that he had subsequently stated that a *permanent* location of his road had *reduced* this estimated, (or *guessed*), cost about 50 per cent! That is: He estimated the cost at \$15,000 per mile. The location of the line reduced the

cost of graduation about 50 per cent. Yet in the face of this reduction he puts the road under contract at one hundred per cent. advance! We think Mr. Smith will have to guess again before he gets out of this dilemma.

(4th.) Mr. Smith states that the line of his road does not extend from Evansville to Union, but from Evansville to Indianapolis "only."—Let us see—

The 3rd of the articles of association under which the road was organized is as follows:

"The purpose of this corporation is to construct, own and maintain a railroad from the city of Evansville in the county of Vanderburgh, by way of the city of Indianapolis in the county of Marion to the Town of Union, in the county of Randolph, in the State of Indiana. The said railroad to pass through the counties of Vandalburgh, Gibson, Pike, Daviess, Green, Owen, Morgan, Marion, Hancock, Henry and Randolph in said State." In the 5th article it is stated that "the length of the road as near as may be, will be two hundred and twenty-four miles."

According to the articles of association, the line of railroad is precisely as stated by us. We have already shown that the cost of the entire line was estimated for in the address of the President to the Directors.

Again in Mr. Smith's address, describing his line, he says: "It is about 225 miles in length from Evansville to Union; there is 150 from Evansville to Indianapolis, seventy-five miles from Indianapolis to Union, our Eastern terminus. The 75 miles between Indianapolis and Union may be located on a tangent without a curve, or a bridge of over 50 ft. span, upon a twenty-fiveft. maximum grade."

It strikes us that after Mr. Smith's assertion that the line of his road extended "only" from Evansville to Indianapolis, the proof of the contrary, drawn from his own mouth places him in rather an awkward predicament.

So much for proofs drawn from Mr. Smith's own record. We might go further, and give some account of his connection with the Indianapolis and Bellefontaine road. This road was projected by him, by whom it was mainly controlled during the period of its construction. The road undoubtedly should have been constructed on a direct line between Indianapolis and Union. Mr. Smith tells us it could have been graded at a cost of \$3,000, per mile, having no bridges with spans exceeding 50 feet, with average grades of 25 feet to the mile, and upon a straight line. Why did he not take this line for the Bellefontaine road? Because he owned some property at Yorktown or Muncietown and curved the road to promote his private interests. The location of the road in some instances was so palpably wrong that the locating engineer, as we are informed, refused to locate it in obedience to Mr. Smith's wishes, without express instructions, determining not to risk his professional reputation by being responsible for the line adopted. Mr. Smith thus prostituted his position to advance his personal ends. Soon after the road was completed he became obnoxious to a majority of the stockholders, left the company, and took up this new project which, if built, could have no other effect than to destroy one in which he had, only a year or two before, induced the public to invest on the ground that it was the best route between the termini! When he left the

Bellefontaine road, he threatened, as we are well informed, that the stock should come down to 50 cents on the dollar, and now gloats over the fact, that it has reached this figure. He may for a time dissemble his intentions, as he has seen with what indignation his unprincipled and outrageous proposition was received; but no one that knows him will doubt that he will build the portion of his line between Indianapolis and Union the moment he finds it in his power to do so. He may smother his rage for the present, but it burns no less fiercely, notwithstanding. That he has

formed a company for this very purpose, and proclaimed both at home and abroad what he intended, shows the man. The moment he proclaimed this purpose he was a fallen man, and forfeited self-respect and the confidence of every upright mind. If men in the responsible position of President of railroads will, upon a frivolous pretext, or an imaginary affront, repudiate every pledge they have given to the public, and seek to destroy a work once entrusted to their care, we should like to know what we are coming to. Mr. Smith's straight line between Indianapolis and Evansville is not so direct a line as the line of the Bellefontaine road. If in like manner as with the directors of this, he quarrels with the company with which he is now connected, what assurance can he give us that he will not undertake a new straight line for the purpose of ruining the crooked one into which he now is attempting to delude the public?

Mr. Smith strives to give the impression that our notice of his road was an unwarranted and unexpected attack upon his project. He has long known what we thought of it. Nearly a year ago we wrote him a private letter, dictated by the kindest feelings, urging him to proceed no further; pointing out the change in the public sentiment in reference to railroads; expressing our conviction that he could not build his road, that it would not pay if built; and that, if persisted in, he would find himself involved in the pressing troubles that were weighing so heavily upon all our companies. His reply was what might probably have been expected, a puff of the project and himself. He continued to write such puffs till he found we would publish them no longer. His method of proceeding is to impose upon the public confidence by the magnificence of his assumptions. To gain favor abroad, he fills Eastern prints with magniloquent puffs of himself and his scheme, written by himself, and encourages people at home with assurances of the wonderful popularity of his road abroad, as evidenced by the favorable notices of the press! Such things are enough to sicken any man possessing the least particle of sensibility.

We have simply done our duty to Mr. Smith. We entreated him in season to abandon his scheme. He knows well, as does the recent Vice President of the road, that we intended to warn the public against the project, if the company came here for money before they were entitled to borrow. That he feels some chagrin we can imagine; but we certainly thought he had more sense than to get into a controversy with us, when he must have known that we had by us the means of making good from his own mouth every word we had uttered. A man that talks and writes as much as Mr. Smith does, has need of a better memory than he appears to possess.

#### Knoxville and Kentucky Railroad.

The Chief Engineer of this road, M. B. Prichard, Esq., in a letter addressed to the President of the Lexington and Danville Railroad, makes the following statement in reference to the former.

"A survey was made, two years since, under my directions, of the entire line from Knoxville to Danville, and a practicable route found with grades not exceeding 52 8-10 feet per mile. A report was also made and published in the newspapers of this section. I have no copy, and fear I cannot find one to send you.

The estimated cost of the road in Tennessee (a distance of—say 60 miles) is \$1,750,000.

The Company have stock subscriptions of the city of Knoxville, for .....	\$50,000
Knox county .....	100,000
Anderson county .....	100,000
Campbell county .....	50,000
Individual subscriptions in Knoxville & on the line .....	150,000
	\$450,000
State loan for Clinch river bridge .....	100,000
Do. for Iron and Equipment .....	600,000

Total ..... \$1,150,000

Aid is expected from the East Tennessee and Georgia Railroad Company; also from the cities of Augusta, Charleston and Savannah.

There will be no difficulty in providing for the portion of the road in Tennessee, if Kentucky will take care of her part. It is the intention of the company to commence the location in a short time, and put the whole line under contract this season."

#### The Debt of St. Louis.

The present bonded debt of the city of St. Louis is \$3,859,096, and the annual interest payable thereon is \$232,743, a portion of which, however, is refunded by the several railroads, to which St. Louis has loaned her credit or subscribed for stock. The increase of the debt during the past year, was \$605,000, as follows:

North Missouri Railroad .....	\$200,000
Iron Mountain " .....	100,000
To new Water Works .....	106,000
Harbor Improvement .....	50,000
Wharf North .....	65,000

The balance is for sewerage. The average at which the city bonds for the above works were negotiated is about 86 per cent. Considering the stringency and deranged state of the money market during the past year, the price is very creditable to St. Louis.

#### Florida Railroad.

We had the pleasure yesterday of meeting A. Bangs, Esq., the managing contractor of the firm who have engaged to build the Railroad across the Peninsula of Florida from Amelia Island to Cedar Keys. Mr. Bangs informs us that he expects to have two hundred hands on the road in a few days, and that the work will be pushed on as fast as possible, there being no lack of funds. Mr. B. left last evening for Charleston to make arrangements for the immediate commencement of the work upon the piling and bridge of Nassau river.—*Savannah Republican*.

#### Pacific Railroad Surveys.

EXTENSION OF THE ROUTE OF THE THIRTY-SECOND PARALLEL TO SAN FRANCISCO.

For a connexion with the Bay of San Francisco, the most direct route from the San Gorgonio Pass would be through one of the passes leading from the plain of Los Angeles to the valley of Salinas river. The practicability of these passes is yet to be determined, and exploration is now being made for this purpose. With the information now possessed, the Bay of San Francisco must be reached by crossing the Coast range to the Great Basin, passing over its south-western

extremity, then crossing the Sierra Nevada and descending to the Tulares valley.

The best pass by which to reach the Great Basin is the "New Pass," made known by Lieutenant Williamson's explorations.

Descending from the summit of the San Gorgonio Pass to the town of San Bernardino, 24 or 25 miles distant, with natural slopes less than 80 feet per mile, excepting for 1.3 mile, where the slope is 127 feet per mile, the route to the Mission and Low Pass of San Fernando (about 100 miles from the summit of San Gorgonio) is over a country giving gently undulating grades, and in other respects favorable to construction, in fertile soil, building-stone, water, and fuel.

The San Fernando Pass is about eight miles through. Its summit has an elevation of 1,949 feet. A tunnel is required one-third of a mile long, through soft sandstone, 203 feet below the summit. An ascent of 620 feet is made on the south side, with grades of 115 feet per mile for four miles along the natural slopes, which cannot be reduced by side location without great expense, and a descent of four miles of 115 feet per mile, with heavy side-cutting in earth on the north side. The ascent to the New Pass in the valley of Santa Clara is now begun, and with a cut of 50 feet for a short distance at the summit, is attained in 29 miles over natural slopes without side location, and with grades varying from 55 to 105 feet per mile. For the space of one mile on the ascent, the mountains close in precipitously, and the streams wind abruptly; and it may be necessary here to cut two or perhaps three short tunnels, from 100 to 300 feet long, through slate granite. The elevation of the summit is 3,164 feet. Descending to the Great Basin, cutting and filling will be required for two or three miles to adjust the natural slope to the grade west of the summit. After that, and until descending into the Tulares valley by the Tah-ee-chay-pah Pass, a distance of about 70 miles, the ground will require little preparation for the superstructure. The lowest level descended to in the Great Basin is about 2,900 feet.

The Tah-ee-chay-pah Pass, first explored throughout by Lieutenant R. S. Williamson, is the most favorable in this part of the Sierra Nevada. Its summit is a nearly horizontal prairie for  $7\frac{1}{2}$  miles. The elevation of its entrance from the Great Basin is 3,300 feet, from which the natural slope ascends at the rate of 22 feet to the mile for 12 miles, then at 80 feet per mile for 9 miles, to the prairie summit.

The descent to the Tulares valley is  $15\frac{1}{4}$  miles by the natural slopes, which vary from 153 to 192 feet per mile, a side location in earth-cutting giving an average grade of 144 feet per mile for 17 miles, which may be reduced still further by an extension to 21 miles—the Tulares valley being entered at an elevation of 1,489 feet. There are two intervals of 13 and 17 miles in the Great Basin where there is no water. Artesian wells here, as in the similar formations between the Rio Grande and the Gila, will probably reach supplies at moderate depths. Deep common wells may be successfully resorted to.

The natural slopes of the three passes just considered are within the power of a 30-ton engine with a load of 200 passengers, each with 100 pounds of baggage.

Supposing 20-ton engines used, and that they carried the maximum loads adapted to the other portions of the road, where the greatest grades are 40 feet to the mile, it would be necessary to divide this load into three parts to pass a grade of 150 feet per mile; and the grades being brought to that, its disadvantage consists in the expense of two additional engines worked through the passes.

From the head of the Tulares valley, the navigable waters of the Bay of San Francisco may be reached in several ways.

The eastern side of the Tulares and San Joaquin valleys is intersected by numerous streams from the Sierra Nevada. The western is bounded by the Coast chain, and has few streams. That

part of the Tulares valley between Kern and San Joaquin rivers, a space of 150 miles, having a soft alluvial soil, is, at certain seasons, miry; a road, therefore, extending through it, should keep near the foot-slopes of the mountains. From the Tah-ee-chay-pah Pass to the best point of crossing Kern river,  $21\frac{1}{2}$  miles, the route passes over a dry, dusty plain, destitute of water and fuel, the soil of which is not well constituted for fertility.

From the crossing of Kern river to the second crossing of the San Joaquin, near Grayson's, the numerous river-beds or bottoms should be crossed on piles, the spaces varying from 50 to 300 feet—the greatest width to be spanned not exceeding 100 feet. From Tah-ee-chay-pah Pass to the Straits of Martinez, the location distance would be 288 miles. The most direct route to San Francisco from the Tah-ee-chay-pah Pass will be found through one of the passes known to exist in the mountain range separating the Tulares and San Joaquin valleys from those of the Salinas and San Jose rivers. The distance through it is about 10 miles; the elevation of the passes about 600 feet. From Tah-ee-chay-pah Pass the route should cross to the western side of the Tulares valley, around the head of the lakes, and enter the Salinas valley as soon as practicable.

The soil of the Tulares valley, north of Kern river, and of the San Joaquin valley, is well constituted for fertility, and needs merely the proper amount of water to be highly productive. Sufficient water and fuel for working parties can be found at convenient distances on this section, (excepting where it crosses the Great Basin, and approaching Kern river; the amount of deficiency on these portions having been already given.)—Lumber and good building-stone are found at various points in the mountains, accessible from their foot-slopes. For fuel for locomotives, the coal of Puget sound and Vancouver's island must probably be depended upon.

The topographical features of this extension of the route are, with the exception of the mountains, favorable to cheap construction. The mountain passes are likewise of a favorable character, their only objectionable feature being their high grades. The nature and extent of this objection has been already stated, and, it is seen, is not serious.

From Fulton to San Francisco the distance is 2,039 miles; the sum of the ascents and descents 42,008 feet, which is equivalent to 795 miles; and the equated length of the road is 2,834 miles; the estimated cost is \$93,120,000.

To Lieutenant Williamson, assisted by Lieutenant Parke, was intrusted the survey of a route from the Bay of San Francisco to the junction of the Gila and Colorado rivers, connecting with the ports of San Pedro and San Diego on the one side, and on the other with the most practicable mountain passes. His work has been thoroughly and handsomely executed, presenting much new and valuable information of the mountain passes on the southern portion of the Sierra Nevada and Coast range. The geological examination, made under his orders, is highly creditable and instructive.

The examination of the middle section of the route of the 32d parallel, by Lieutenant Parke, was very thorough, and highly creditable, though executed with small means; and his report very satisfactorily exhibits the character and essential features of the country over which he passed.—The scientific labors of the boundary survey, which had been previously performed in this region, rendered it unnecessary to do more than make what may be strictly called a railroad exploration.

The examination of the eastern portion by Captain Pope, assisted by Lieutenant Garrard, of the dragoons, was made under the most disadvantageous circumstances, the party having been organized at a remote point, where neither instruments, nor assistants specially instructed in the scientific branches connected with the survey, could be procured. It was, however, creditably performed, and satisfactorily exhibits the topogra-

phy and general character of the country along the line surveyed.

#### CONCLUSION.

To aid in a comparison of the several routes, reference is made to a table prepared by Captain A. A. Humphreys, and hereto appended.

With regard to the estimates of cost, although believed to be as accurate as can be made under present circumstances, they are considered as intended not so much to show the absolute sums of money which would build the several roads, as to represent the relative qualities of material and labor required for the purpose. If now tested in the actual construction of any one of the roads, they will doubtless be found to contain many errors; but as the same data have been assumed on all the routes, the same amount of error will probably be found in each, and the actual expense will thus preserve the same proportion.

With regard to the equated lengths of the several roads, or, in other words, the influence of ascents and descents upon the expense of working, it is proper to direct attention to the remarks of the engineer, appended to the tables, in which he states that, on all the routes, the amount reported will be subject to increase when the minor undulations of the ground shall be measured; and this increase will be greatest on those routes and in those portions where the features of the country are less regular—that is, where there are most of such minor undulations to be measured. The equated distances also affect the cost of working a road only under certain circumstances, which may or may not exist on the contemplated route.

A comparison of the results stated above, and of those exhibited in the tables referred to, conclusively shows that the route of the 32d parallel is, of those surveyed, "the most practicable and economical route for a railroad from the Mississippi river to the Pacific ocean."

This is the shortest route; and not only is its estimated cost less by a third than that of any of the other lines, but the character of the work required is such that it could be executed in a vastly shorter period. It is obvious that a road on any of these routes, with the exception perhaps of the 47th parallel, must be built continuously from the two extremities, and an obstacle that arrests its progress at any point defers the commencement of all the work in advance. The tunnels and much of the other work on the more northerly routes in the most desolate regions are such as could not be commenced until a road was constructed up to those points, and would then require a long period for their completion.

On the southernmost route, on the contrary, the progress of the work will be regulated chiefly by the speed with which cross-ties and rails can be delivered and laid, the nature of the country being such that throughout the whole line the road-bed can easily be prepared in advance of the superstructure. The few difficult points, such as the Pass of the Guadalupe and Hueco mountains, and the passes between the Rio Grande and Gila, would delay the work but an inconsiderable period.

This peculiarity of the ground presents another advantage in the fact that temporary tracks could be laid upon the natural surface of the earth to almost any extent, to serve for the transportation of materials and supplies.

The climate on this route is such as to cause less interruption to the work than on any other route.

Not only is this the shortest and least costly route to the Pacific, but it is the shortest and cheapest route to San Francisco, the greatest commercial city on our western coast: while the aggregate length of railroad lines connecting it at its eastern terminus with the Atlantic and Gulf seaports is less than the aggregate connexion with any other route, as will be seen by reference to the appended table B.

With regard to the circumstances which affect the cost of working and maintaining the road, they are more favorable than on any other route. In this dry climate the decay of cross-ties and other

timber would be very slow, and the absence of severe frost would have a most important influence upon the permanence of the road-bed, and heavier grades could be adopted than in a climate where ice and snow prevail.

The snows on all other routes, except that of the 36th parallel, could not fail at certain seasons to suspend the working of the road, for on all such snows are known to have fallen as would interpose an effectual barrier to the passage of trains. Such an occurrence in this desolate region would be attended with more serious consequences than in inhabited districts.

In only one important respect is this route supposed to be less favorable than some of the others and that is in the supply of fuel. The difference, however, in favor of the others is not great, unless the existence of coal at certain points along those routes where it is indicated should be verified by further examination. The cost of fuel is about one-fifth of the whole expense of maintaining and working a railroad.

The grades of the several routes, and other similar information, will be found upon the sheets of profiles compiled in the office.

In the determination of the explorations proper to be made—in the examination of the reports of the surveying parties, the preparations of the profiles, and of a general map to exhibit, in their geographical relation to each, all the routes of which an instrumental examination had been made—I am greatly indebted to the assistance which has been rendered by the officers of the corps of topographical engineers employed in the office established here in connexion with the explorations directed by the act; and I will here especially acknowledge my obligations to Major W. H. Emory, whose extensive knowledge of the western regions of our country, no small part of which he had actually explored, and whose sound judgment in all things connected with topographical reconnaissance and field operations, gave me important aid in the organization of the work and the subsequent office examinations necessary to systematize its results.

When, in August, 1854, Major Emory's duties as commissioner to run the boundary-line between Mexico and the United States separated him from further connexions with these explorations, he was succeeded by Capt. A. A. Humphreys, whose high scientific attainments and power of exact analysis had been manifested in several important positions which he had held, and are further shown in the table and comprehensive examination, here-with submitted, of the reports of the several parties of exploration.

Lieutenant G. K. Warren, first under Major Emory, and subsequently under Captain Humphreys, has been specially intrusted with the preparation of the material and the construction of the general map, together with the compilation of profiles of all the routes which had been instrumentally surveyed, and the collection of all general information which would aid in the determination of the question before the department. In these duties he has recently had the zealous and efficient aid of Lieut. H. L. Abbott.

These laborious and important duties have been performed by the officers above named with the most commendable diligence and intelligence, and much of whatever success belongs to the preparation and presentation of the matter collected is due to these officers.

Captain McClellan, of the corps of engineers, after the completion of his field operations, was directed to visit various railroads, and to collect information of facts established in the construction and working of existing roads, to serve as data in determining the practicability of constructing and working roads over the several routes explored.—The results of his inquiries will be found in a very valuable memoir herewith submitted.

Very respectfully, your obedient servant,  
JEFF'N DAVIS,  
Secretary of War.

Hon LINN BOYD,  
Speaker of the House of Representatives.

	Miles.	Miles.	Feet.	Miles.	Distance in straight line.							
					Distance by proposed railroad route.							
					Sum of ascents and descents.							
					Length of level route of equal working expense.							
					Comparative cost of different routes.							
					Number of miles of route through arable land.							
					No. miles of route through lands generally uncultivable, arable soil being found in small areas.							
					No. of square miles of sums of areas of largest bodies of arable land in uncultivable region.							
					No. of miles at an elevation above 0, and less than 1,000 feet.							
					No. of miles at an elevation greater than 1,000 and less than 2,000 feet.							
Route near 47th and 49th parallels, from St. Paul to Vancouver	1,455	1,864	18,100	2,207	\$30,781,000	374	1,490	1,000	470	580	720	180
Extension thence to Seattle	161	1,000	180	*\$10,090,000	161	..	..	..	..	..	..	..
Route near the 41st and 42d parallels, via South Pass from Council Bluffs to Bonicia	1,410	2,032	29,120	2,583	116,095,000	632	1,400	1,000	180	170	210	160
Route near the 38th and 39th parallels, from Westport to San Francisco by the Coo-che-to-pa and Tai-ee-chay-pah Passes	1,740	2,080	49,986	3,125	Cost so great that the road is impracticable.	620	1,460	1,100	340	276	165	348
The same, from Westport to San Francisco by the Coo-che-to-pa and Madelin Passes	1,740	2,290	56,514	3,860	do.	670	1,620	1,100	275	308	190	143
Route near the 35th parallel, from Fort Smith to San Pedro	1,360	1,892	48,812	2,816	169,270,265	416	1,476	2,300	305	347	260	185
Branch road to San Francisco, from the Missouri river	406	7,500	506	19,935,000	322	84	..	290	10	72	85	..
Route near the 32d parallel, from Fulton to San Pedro	1,400	1,618	32,784	2,239	68,970,000	408	1,210	2,300	485	300	100	170
Extension to San Francisco	440	10,150	632	25,100,000	376	70	..	290	50	65	35	..
Tunnel at elev.												
6,044 ton of 5,219 fl. 10,032 ton of 9,540 fl.												
Sterile region.												
Summit of the highest pass on the route.												

\* These are the estimates of the offices, those of Gov. Stevens having been brought to the same standard of increased cost as the other routes, and his equipment reduced to that of the other routes. His estimates were \$117,121,000 and \$7,030,000.

† Supposing the route to be a straight line, with uniform descent from the Un-kuk-oop mountains (near Sevier river) to the entrance of the Tai-ee-chay-pah Pass, the most favorable supposition.

|| These sums do not include the areas of culmitable soil as far west as the Cascade and Sierra Nevada mountains. The sum of the minor undulations (not included in the sum of ascents and descents here given) will probably be greater for the route of the 47th parallel than for the other routes; that for the route near the 32d parallel will probably be the least of all.

With the amount of work estimated for the roads in this report, the equated lengths corresponding to the sum of ascents and descents has but little practical value. With a full equipment and heavy freight business, the sum of ascents and descents becomes important. A comparison of the degrees of curvature of the routes cannot be safe.

## NOTE TO TABLE A.

The sum of the ascents and descents given for the various routes, does not take into consideration those minor undulations which sometimes largely increase the aggregate.

I think it probable that when detailed surveys are made, it will be found that this sum for the route near the 47th parallel will be more increased than those for the other routes, and that the sum for the route near the 32d parallel will be less increased than the others.

The equated lengths corresponding to these sums, may give erroneous impressions. If the loads to be habitually carried over the roads are within the power of the engines over the greatest grades proposed, then the sums of ascents and descents really have little meaning or value. The wear and tear of rail and machinery, and consumption of fuel, would be somewhat greater on the road having the largest sum; but the difference would not be worth taking into account, unless there was an equality in all other respects between the routes.

If there are some grades so steep as to require the division of the loads habitually carried over other portions, the cost of the extra locomotives, and of working them over those portions, will show the extent of the disadvantage and yearly cost.

So far as any estimate has been made by me of the amount of work to be done on the roads, these sums of ascents and descents have little practical value, since those portions of the routes have been indicated where it may be considered advisable to use steep natural slopes with extra engines, to expedite the completion of the road, and save expensive road-bed preparation. With a full equipment and heavy freight business, the sum of ascents and descents becomes important.

The nature of the surveys does not admit of a comparison of the degree of curvature on the several routes.

## B.

*Distance of the eastern termini of the several Pacific railroad routes to the Mississippi river, Boston, New York, Charleston, and New Orleans, by railroads built, building, and projected, as measured on the "Railroad Maps."*

1. St. Paul to Boston.....	Miles 1,316
to New York.....	1,190
to Charleston.....	1,193
to New Orleans.....	1,198
Aggregate.....	4,897

2. Council Bluffs to Rock Island, (Miss. river).....	267
to Boston.....	1,374
to New York.....	1,252
to Charleston.....	1,195
to New Orleans.....	1,075
Aggregate.....	5,163

3. Westport, mouth of Kansas, (near Fort Leavenworth,) to St. Louis, (Miss. river).....	245
to Boston.....	1,415
to New York.....	1,220
to Charleston.....	1,045
to New Orleans.....	875
Aggregate.....	4,800

4. Fort Smith, on the Arkansas, to Memphis, (Miss. river).....	270
to Boston.....	1,540
to New York.....	1,345
to Charleston.....	960
to New Orleans.....	655
Aggregate.....	4,770

5. Fulton to Gaines, (Miss. river).....	150
to Boston.....	1,530
to New York.....	1,335
to Charleston.....	950
to New Orleans.....	402
Aggregate.....	4,867

## Columbus and Hocking Valley Railroad.

The surveys on this line of road were commenced in March, 1864, under the superintendence of Benj. H. Latrobe, Esq. The road as located extends along the banks of the river after which it is named from its confluence with the Ohio, nearly opposite Parkersburg in Virginia, to Lancaster, whence it is contemplated to be extended to Columbus. The length of the line to Lancaster is 78 miles, and its general direction from South-East to North-West. At Parkersburg, it connects by a bridge which is to cross the Ohio 125 feet above low water, with the North-Western Virginia Railroad. Its course is then along the banks of the Ohio to the mouth of the Hocking, a distance of 8 miles, where it connects with the Hillsborough road. From this point the line is very direct, crossing the river at several places, so as to avoid the windings of the stream. At Athens, 27 miles from the Ohio, it intersects the Cincinnati and Marietta Railroad; at Logan, 25 miles further, the Scioto & Hocking Valley; and at Lancaster, its present proposed terminus, it unites with the Cincinnati, Wilmington and Zanesville line. The route is stated to be remarkably favorable as to grades and curvature, there being no grades West of Athens over  $18\frac{1}{4}$  feet to the mile; and below that point, of  $52\frac{3}{4}$  feet, the latter being capable of a considerable reduction. The total rise and fall of the whole line is only 646 feet. Over one-half of the entire distance is level; three-fourths of the remainder are below  $83\frac{1}{3}$  feet; and only about 8 miles are of the maximum gradient of  $52\frac{3}{4}$  feet. The shortest curve is one of 4 degrees, or 1,433 feet radius. On the grades of 13 feet none occur with a less radius than 2,865 feet. About two-thirds of the whole length consists of straight line.

It will thus be seen that the route is remarkably direct and favorable for construction, particularly above Athens, at which place on descending the valley large deposits of iron ore, coal, fire-clay, and building materials begin to show themselves. As the direction of their transportation will be principally up the valley, it was necessary that the grades on this part of the road should be of such a character as to offer the least possible resistance to the heavy freight business which is anticipated to be done by the company. This has been accomplished, we think, in a very masterly manner by Mr. Latrobe, their Chief Engineer.

The estimated cost of the work is as follows: For Graduation, masonry, and bridging... \$709,812 Iron rails and track-laying..... 712,500 Buildings and water-stations..... 70,000 Engines and cars for transporting materials..... 15,000 Engineering and general expenses... 70,000 Interest, fencing, &c., &c..... 85,000 Total cost ready for equipment... \$1,662,312

The total estimated earnings of the road for the second year are as follows: From through passengers..... \$108,500 Local do..... 78,850 Freight..... 120,000

Total..... \$307,350 The ordinary expenses are estimated at... 130,711

Leaving as net earnings..... \$176,639 From which are to be deducted interest on capital as follows:

Estimated cost of road \$1,662,812 at 6 per cent.....	\$99,739
Estimated cost of Machinery \$291,100 at 10 per cent.....	29,110
	\$128,849

—which if deducted from the net earnings leaves a surplus of \$47,790, after paying six per cent. per annum to the stockholders.

The report of the surveys is very minutely drawn up; and as far as estimates can go, we presume may be relied on. Its pages are not filled with the gas-bubbles so often observed in documents of this description. While holding out the prospect of the road's paying handsomely, its construction is urged rather on the ground of the incidental advantages it will confer on the section of country through which it passes than the hope of very large dividends. A work thus commenced in "truth and soberness" will most probably cost less from the outset, be better managed, and prove a safer investment, than one where the contrary course is pursued.

## Virginia and Tennessee Railroad.

## EDITOR RAILROAD JOURNAL.

Sir: I have been pleased to find recently in your valuable journal, some detailed notice of the Virginia and Tennessee Railroad. This important link in the great system of railway communication between New York, Philadelphia, Baltimore, Washington City, Alexandria, Richmond, and Petersburg, with the lower valley of the Ohio and the valley of the Mississippi, has, in my judgment, never received that consideration either from capitalists or others engaged in railway enterprises, that it justly deserves. I regard it as second in national importance, to no other of similar extent in the Union. For this opinion, I offer the following reasons:

*First*, It is a part of the shortest line of communication between the Atlantic and the Ohio river at Louisville and the Mississippi at Memphis, by 200 miles; assuming the mouth of the Hudson, the capes of the Delaware and the mouth of the Chesapeake, as the great points of comparison on the Atlantic coast.

*Second*, Through the Lynchburg and Petersburg and Petersburg and Norfolk Roads, it affords the West and South-west a railway communication with the Atlantic at the best harbour on the coast—being always open and accessible, perfectly land-locked and secure, and having four feet more water than New York.

*Third*, It gives to the Northwestern States, through the Kentucky improvements and the Cumberland Gap Branch, a communication some 500 miles nearer than by New York, and 200 miles nearer than by New Orleans.

*Fourth*, Norfolk, the Atlantic terminus of this line, will be the best point for distribution of Western produce coastwise, as well as for foreign shipment.

*Fifth*, This line will be free from all the obstructions of ice and snow in winter, which seriously affect the business of the more Northern lines.

*Sixth*, As a military road, this line has advantages over all others, as it passes from the sea-coast to the Southwest by the Tennessee connections, and to the Northwest, (as before stated,) by the Kentucky extensions through the very heart

of the Union, and would be perfectly secure from hostile aggression in time of war.

With your permission, I will in a future number, offer some considerations, going to show that the Virginia and Tennessee Railroad, irrespective of its connections with other railroads, possesses of itself and within itself, all the elements of a paying road; that is, if the connections beyond the limits of Virginia, and which, of course cannot be controlled or directed by Virginia Legislation, should fail to realize the results now anticipated,—the country tributary to this road, and within the limits of Virginia, possesses ample capacity to give a business to the line that will make returns of very satisfactory dividends to the stockholders.

#### SOUTH-WESTERN VIRGINIA.

##### *Madison and Indianapolis Railroad.*

This road, 87 miles in length, connects the capital of the State of Indiana with Madison, the nearest point on the Ohio river. It was begun in 1837 under an act of the Legislature providing for the construction of a system of public works by the State, and appropriating for that purpose \$12,000,000—to be raised by an issue of five per cent. bonds. A Board of Public Works appointed by the General Assembly was instituted under whose management and control these works were placed. The undertaking was pushed forward with considerable vigor. But the termination at Madison being over an inclined plane of 814 feet to the mile, giving an ascent of 420 feet in about one and a third miles, the construction of the road over it, consumed a large amount of both time and money, retarding the opening of the road, until the commercial revulsion of 1842 prostrated the State.

The first section of the road, from Madison to Griffiths, 26 miles, was opened in 1841, at a cost of \$1,200,000. This part was laid with a T rail of 42 lbs. to the yard. At the same time, about \$450,000 had been expended in grading and bridging on the next section, extending from the termination of the first to Edinburg, a distance of 30 miles.

The pecuniary embarrassments which befel the West, particularly the State of Indiana at this time, are well known. The State was unable to procure loans sufficient to finish her works which had necessarily to be abandoned. Among these was the Madison and Indianapolis railroad.

At the time of suspension, that part of the road then completed yielded the State a net revenue of only \$1,152 per annum, while the work itself was rapidly going to decay. In the session of 1841-2, the Legislature passed an act authorizing the organization of private Companies, to which the various public works should be transferred for the purpose of completion. The terms on which the Madison and Indianapolis road was thus transferred, were substantially as follows:

1st. That the road should be completed to Indianapolis by the 1st of January, 1848; on which condition the \$450,000 expended by the State on the unfinished part of the road, were to become a grant or donation to the company.

2nd. That the company should pay the State annually as rent for the finished part of the road the sum of \$1,152 (that being the amount of net receipts for 1841,) until 1844. This period was subsequently extended to the beginning of 1853.

3d. The company might at any time purchase the interest of the State, by paying in the original bonds thereof the cost of constructing the 26 miles—\$1,200,000; and if the company should not choose to do so, the purchase was open on the same terms to individuals or other corporations.

4th. The entire control of the road was to rest with the company, reserving to the State, however, after 1867, the right to purchase the same, by paying the cost, together with 6 per cent. interest till that date, unless the dividends should have amounted to that sum. This last reservation has since been set aside by the new Constitution, prohibiting the State from holding any interest in works of internal improvement.

The new company was organized in 1842. With great effort and difficulty, an amount of stock was subscribed sufficient to complete ten additional miles of road. The company, at this time, were in a very embarrassed position; their resources being limited, and their credit insufficient to raise means for the further extension of the road. A few individuals in Madison, however, stepped forward, loaned them money and endorsed their paper so that they were able to purchase flat bar iron sufficient to lay 13 miles from Griffith's station, making 39 miles in all, in operation. The business soon began to increase so greatly in consequence of this addition, that the public began to feel the certainty of the road becoming a profitable investment, on its completion to Indianapolis.

In 1845, a loan of \$50,000 was negotiated in New York, on the seven per cent. convertible bonds of the company. This load was about the first Western Railroad loan taken in New York. In the following year an additional loan of \$100,000 was negotiated. Subsequently the whole of these was converted into the stock of the company.—These loans, together with a sale of stock at par enabled the Directors to complete the work within the time specified by law. The rolling stock, however, was very defective,—the inclined plane being worked with horse-power—while the company were entirely destitute of machine shops, engines houses, water-stations, &c.

In 1848, the capital stock was increased \$300,000, to take up 28 miles of flat-bar and substitute T rail, and to provide motive power and rolling stock. In the following year, a further addition was made to relay the remaining 40 miles with the heavy rail, and provide the necessary ground, buildings, and other fixtures, which was accomplished in 1850 and 1851. Large buildings were erected at Madison and Indianapolis for depots, machine shops, engine houses, &c.; wharves were constructed and grounds purchased to facilitate the shipment of produce at Madison, and a union track built at Indianapolis to connect this with other roads centering in this point. In 1851, the largely increased business of the company rendered a further issue of bonds necessary to thoroughly equip the road. This was made to the extent of \$250,000, bearing seven per cent. interest, and convertible after May, 1853. The expenditure of this sum put the company in a good condition, enabling them to supply sufficient engines, cars, &c.

During the Legislative session of 1851-2, a bill was passed, selling to the company all the right,

title, and interest of the State in the road for \$600,000 in the two and a half per cent. stocks of the State, or \$300,000 in money—the payment to be made in four annual instalments from 1854 to 1857 inclusive. This proposition the company promptly accepted, and the contract was executed. The first payment of \$100,000 was made in 1851 out of the surplus earnings of the road, after paying a dividend of ten per cent.

The same act required the company to construct, within four years, a new termination at Madison in order to avoid the inclined plane at that place. For this purpose, they resolved upon a new issue of bonds to the amount of \$200,000 similar to those already issued, making the entire indebtedness of the company, at this date, \$450,000, on a capital stock of \$1,650,000.

The following statement shows the receipts and expenditures of the company, from the date of organization till 1851.

Receipts in 1845	.....	\$60,053 48
1846	.....	101,014 79
1847	.....	156,653 24
1848	.....	212,125 85
1849	.....	247,920 34
1850	.....	296,700 73
1851	.....	386,068 80
Total	.....	\$1,460,537 23
Expenditures in 1845	.....	\$47,415 64
1846	.....	52,202 52
1847	.....	91,669 45
1848	.....	123,405 69
1849	.....	188,682 81
1850	.....	157,689 75
1851	.....	158,080 60
	.....	\$769,146 46

Net gain ..... \$691,390 77

Out of which, dividends of ten per cent. had been annually declared since 1846, except in 1850 when one of nine per cent. only was paid.

At the time of commencing this work, the greater part of the line extended through a mere wilderness. Since its construction, the country has rapidly filled up with population, and otherwise been improved in a corresponding degree.

The earnings of the road for 1852 were \$516,414 52, of which the ordinary expenditure was \$282,225 01, and the interest on bonds \$29,240.01 leaving as net earnings \$204,949 50, out of which two dividends of five per cent. each were declared. The works sustained some damage this year from a heavy freshet which occurred in December. A large amount reckoned under the head of running expenses, was used in making permanent improvements on the line of road and its machinery; while a heavy force was employed on the new route into the city of Madison.

The year 1853 was not so favorable to the business of the company, their earnings having reached \$441,159 78 only, showing a decrease of \$75,000 from the previous year, while the expenses amounted to \$299,655 91, leaving as net earnings \$141,503 87. Out of this a dividend of five per cent. in cash was paid in June, and the remainder having been spent on construction, a scrip dividend of eight per cent. payable, with interest, after three years, was declared on the last six months' earnings. Several causes contributed to reduce the gross receipts, among which may be mentioned the opening of more direct communications between Cincinnati and Indianapolis, the reduc-

tion of fares consequent on the increased competition, the partial failure of the crops in the West, and the state of the Ohio river which was unnavigable the greater part of the year.

In September, an arrangement for consolidation with the Peru and Indianapolis company was entered into, to take effect on the first of January following. As this turned out to be rather a short-lived union, having been dissolved in the ensuing fall, it is unnecessary for us to state the particular terms and conditions on which it was consummated.

A running arrangement was made with the Jeffersonville road in October, which went into operation shortly afterwards.

The condition of the money market and the high prices of labor led the managers to suspend operations at Madison for part of the year. The report for 1853 showed that there had been expended on this work \$277,760. The estimated amount required for its completion was \$115,000.

Previous to consolidation, the liabilities of this company stood thus:

Capital stock.....	\$1,647,500
Seven per cent. mortgage bonds.....	600,000
Income bonds.....	39,000
Domestic bonds.....	2,300

Total..... \$2,288,800

The receipts on the Madison division of the road for the six months ending June 30th amounted to ..... \$145,821.04 Expenditure for the same period..... 94,649.85

Net earnings..... \$51,171.19

No dividend was declared out of this sum, the managers having spent considerable sums in repairs, and taken up four or five miles of the old track which was re-laid with new iron. On both passengers and freight, a large diminution had taken place, owing to competition from other roads. The company made an extra effort, by the purchase of two steamers to run in connection with their line; but were obliged to abandon the attempt, owing to the heavy expenditure connected with it.

At date of last report (June 30th) the liabilities of this company were:

Capital stock.....	\$1,647,500
Seven per cent. mortgage bonds.....	600,000
Seven per cent. income bonds solds.....	316,000
Domestic bonds.....	2,300
Bills and accounts payable, say.....	185,765
Scrip dividend, due Jan'y, 1857.....	131,816
Indebtedness to State.....	354,000

\$3,237,381

It has already been stated that of the mortgage bonds, \$350,000 were applied to the construction and equipment of the road, and \$250,000 to the new terminus at Madison. The income bonds issued amounted to \$600,000, which are secured by a second mortgage upon the entire line of the road. Of these there had been sold, at date of report, \$316,000. The remainder were deposited as collateral security or unsold. Of the floating debt, the sum of \$122,819 was contracted on account of the Columbus and Shelby road, for iron and other necessities, leaving the floating debt of the Madison road proper \$62,946, in addition to the scrip dividend payable in 1857.

The Shelbyville branch, which was constructed principally with the means and credit of the Madison company, has proved a complete failure. It

is proposed to take up the track and use the materials on the main line.

The managers state their determination to declare no more dividends till the debts are liquidated and the road put into good order.

#### Bellefontaine and Indiana Railroad.

The company owning this road were organized with a capital of \$2,000,000, under the General Railroad Law of Ohio, in 1848. The road extends from Galion, a village 79 miles south of Cleveland on the Cleveland, Columbus, and Cincinnati Railroad, in a south-westerly direction to Union, on the Indiana State border, where it connects with the Indianapolis and Bellefontaine line. The entire length is 118½ miles, proceeding through a section of Ohio, unsurpassed for its agricultural wealth and resources. The first division extends from Galion to Marion, 20½ miles, traversing a generally level section of country, remarkably favorable for railroad construction. The route over this part is very little beyond an air line, with easy grades and long curves. The second division extending to Bellefontaine, is more difficult, particularly in its western part, several ridges of hills running at nearly right angles with the road in the neighborhood of Bellefontaine, and requiring the line to make a bend to the north with a loss of three miles in forty, the length of this division. The maximum grade is 39½ feet to the mile. Shortest curve, 1,100 feet radius. Several creeks and rivers have to be crossed; none of which, however presents serious obstacles. The third division extends to Sydney, a distance of nearly 23 miles. The country is here generally rolling, and in a few places, grades occur as high as 40 feet to the mile. At Sydney, the road crosses the Miami, a stream 250 feet wide. The remainder of the road, from Sydney to the State line constitutes the fourth division. The length of this is 35 miles, being but a fraction over an air line. This part of the work generally traverses a level section of country, and presents hardly any obstacles to railroad construction. The whole route exceeds a direct line by about five miles only. Three-fourths of its course are either level, or with grades not exceeding twenty-five feet to the mile; over 110 miles consist of straight line; and with only one or two exceptions, no curves occur with a less radius than 3,000 feet.—The gauge is 4 feet 10 inches. The total length of bridges is only about 1,100 feet, the longest of which cross the Big Scioto, 140 feet; the Miami, 250 feet; and the Loramie, 150 feet. None of the other streams is above 80 feet in width.

The charter as passed originally, in 1848, was favorable in every respect but one—it fixed the Eastern terminus of the road at Marion, a point from which no favorable connection with any other road could be made. An amendment obtained from the following Legislature, authorized the work to be extended as far as Mansfield, or any intermediate point between it and Marion, thus securing the object of the friends of the road.

The Company were organized in November, 1848 on a subscription of \$50,000, nearly the whole of which was subscribed by the county of Shelby.—Shortly afterwards the people of Marion county voted to subscribe \$100,000 to the undertaking. In October, 1849, the surveys which had been

temporarily suspended, were resumed in good earnest; and in June of the following year, fifty-three miles on the first and third divisions, were placed under contract, to be finished by the 1st of October, 1852. The work on these was commenced shortly afterwards. In January, 1851, that part between Loramie Creek and the State line, was let; and the remainder of the line in the following month. The stock subscriptions, at this date, amounted to \$550,000. The right of way was secured at a cost of about \$12,000 only, the greater part of it, with the depot grounds, having been gratuitously conferred on the company.

The following was the revised estimated cost the road made by Mr. W. M. Roberts, Chief Engineer, in July, 1851.

For graduation and masonry .....	\$482,800
Superstructure .....	973,280
Right of Wry .....	12,600
Buildings and Water Stations .....	80,000
Locomotives and cars .....	150,000

Total ..... \$1,648,680

—or about \$13,400 per mile. This estimate contemplated five miles of sidings, T rail of 60 lbs. to the yard, and only temporary buildings, till after the opening of the road.

The managers early in the year determined on an issue of bonds to secure the more speedy completion of the work, which was done to the amount of \$800,000. These bonds bearing date the 18th July, 1851, were convertible and made redeemable at New York in 1866, with seven per cent. interest payable semi-annually. Of the whole, \$700,000 were sold at favorable rates, the remaining \$100,000 being taken mostly at par by contractors. An issue of \$200,000 in bonds based upon Real Estate subscriptions was also made in New York. The President of the road, Mr. Goodman, shortly afterwards made a purchase in England of 2,000 tons of iron rails, but which, owing to the lateness of the season when they arrived in New York, the company did not receive till the following spring; thus preventing the commencement of the track-laying, till the latter part of May. Ten thousand tons additional were purchased during the winter, and contracts entered into for the chairs, spikes, &c., necessary, besides cross-ties, gravel and freight cars, buildings, and a number of first-class locomotives,—as soon as they should be required by the company. At the date of their second annual report (May 3d, 1852,) the aggregate capital stock subscribed amounted to \$910,000, the finances of the company were said to be in a prosperous condition, and the expectation held out that the work would be completed by the end of that year.

The first division of the road, 20½ miles, was opened for business in August following, with favorable results; but several causes concurred to prevent the remainder of the line from being finished by the time expected. Among these were the scarcity of labor, the prevalence of the cholera in that section of the country, and the delays in receiving iron. The third division, from Bellefontaine to Sydney was not completed until early in February, 1853. By the estimates of the Chief Engineer, the probable cost of the road was put down at \$1,986,682, the increase being occasioned principally by the large equipment and better class of buildings seen to be necessary. Arrangements of a satisfactory kind were made with the

connecting roads east and west, for the reception and delivery of freight on the opening of the line.

The second division completing the road as far as Sydney, a distance of 92 miles from Galion, was formally opened on the 23d of April; and the whole line was completed on the 12th of July following. The Indianapolis and Bellefontaine road had been finished a short time previously.

The fourth annual report, made up to 31st December of that year, showed that the expenditure for all purposes had reached \$2,888,951, from which deducting the value of real estate and saleable materials on hand, made the actual cost \$2,585,769, or \$21,913 per mile. The machinery and buildings were stated to be ample and of a superior kind. From the date of opening to the end of the year, the earnings of the road amounted to ..... \$185,623 49 And the running expenses to ..... 38,255 30

Leaving as net earnings.....	102,368 19
From which deducting 6 months' interest on bonds.....	34,440 00

Left applicable to dividends.....	\$67,928 19
From this one of four per cent. (payable mainly in stock) was declared.	

The last annual report which has just been published, shows the earnings of the road for the year ending December 31st, 1854, to have been From Passengers and extra baggage. \$116,127 31  
 " Freight ..... 118,951 34  
 " Mail and Express ..... 7,931 37  
 \$288,010 02

Of which the ordinary expenses amounted to	
For running trains.....	\$28,370 97
For repairs of road, bridges, &c.....	25,200 63
For repairs of rolling stock.....	26,151 93
For fuel, oil and waste....	19,668 00
For depot and station expenses.....	12,042 82
For office expenses and salaries.....	8,911 20
For sundries, as loss, telegraph, &c.....	3,071 95
	123,417 48

Net receipts.....	\$114,592 54
From which were paid	
For Interest on 7 per cent.	
Mortgage bonds.....	\$55,870 00
For Interest on 7 per cent.	
Income bonds.....	13,930 00
For Loans and Exchange Act .....	856 44
For Taxes.....	11,183 33
	81,389 77

Leaving as surplus.....	\$83,252 77
During the year the managers expended \$124,023 18 on "construction," in ballasting the road, completing and furnishing repair shops and stations, and for additional rolling stock. The greater part of the line is now laid with ballast. A large and commodious Engine House and Repair Shop, 150 feet in diameter, has been erected at Galion, and a Blacksmith Shop 50 by 90 feet.—The Repair Shop is 225 by 65 feet. One-fourth of these buildings is the property of the Cleveland, Columbus and Cincinnati Railroad company. The B. & I. company own no warehouse on their line, except one at Bellefontaine, which they have leased out at a yearly rent of \$500; preferring	

to leave warehousing and commission to private enterprise. Ample freight accommodations are provided all along the line; but those for passengers are said to be very defective at several places. A thorough examination of the accounts has been made, and the new statement made out shows the cost of the work to be \$2,805,821. The length of the road, including sidings, is 128 miles, making the cost per mile \$21,920 which is considered as low as a work of that character can be built for. The earnings for the year have been much lower than was anticipated; but this is accounted for by mere temporary causes, as the Erie troubles, the failure of the wheat crop, the condition of the Ohio and Pennsylvania road which was, for a considerable time, unable to forward their freight, and the want of a through line between Terre Haute and St. Louis. It is hoped that these obstacles will be removed, and that the road will receive that amount of business which, from its excellent location it deserves.—The propriety of assisting the direct line, running from Terre Haute to St. Louis, is recommended to the stockholders. Owing to these causes of depression, it is stated, there is not a probability that a dividend can be made in 1855.

#### GENERAL ACCOUNT.

	Dr.
To Capital Stock.....	\$1,881,598 91
To Seven per cent. First Mortgage Bonds.....	791,000 00
To Seven per cent. Real Estate Bonds.....	200,000 06
To Seven per cent. Income Bonds. Floating Debt, (net amount).....	199,000 00 70,612 10
Net Earnings.....	101,180 96
	\$3,234,391 97
Cr.	
By Construction, Equipment, and Buildings.....	\$2,805,821 46
By Unsold Real Estate (mortgaged) Bonds, Mortgages, and Cash in hands of Trustee.....	158,277 00 61,523 32
By Unincumbered Real Estate.....	53,901 00
By Stock Col., Piqua, and Ia. R. R. Co .....	10,000 00
By Dividends and interest on stock.	117,558 64
By Materials and supplies on hand.	27,841 68
By Cash on hand.....	8,468 87
	\$3,243,391 97

The officers this year are—James H. Godman, President; J. M. Townsend, Secretary; W. W. Conklin, Treasurer; and W. M. Roberts, Chief Engineer. The names of the other Directors are John Mills, Robert H. Canby, Henry Week, W. S. C. Otis, S. Chamberlain, and E. T. Sterling.

#### Detroit, Monroe, and Toledo Railroad.

We observe that the citizen of Monroe are going to work in good earnest in subscribing to the stock of the above road. Fifty thousand dollars have already been taken in that one place containing a population of little over 5,000.

The original understanding was, that the citizens of Detroit, Monroe, and Toledo should each take \$25,000 stock in the concern; but as the people of Toledo have declined to do their share, the inhabitants of Monroe have come up manfully to the rescue, having subscribed and paid their assessments on the sums to be raised in both places.

We hope soon to hear of the people of Detroit following the worthy example of Monroe. We see no reason why such an important connection as the above line will be, should not prove a good investment.

The American Railroad Journal \$5 per annum in advance. Advertising per annum \$125 per line.

Railway Map of the United States showing all the Railways in operation, progress and projected—on rollers \$3—pocket edition, by mail, \$1.

Johnson's Routes to the Pacific with Maps, \$1.

Lyon's Tables of Excavations and Embankments, \$150.

A copy of the pocket edition of our new Map, corrected to 1st January, will be given to each new Subscriber and to each of the others who have paid up to Jan'y 1st, 1855; also to those who have not yet paid, as fast as they pay up.

Please address AMERICAN RAILROAD JOURNAL,

Office 9 Spruce st., New York.

Our Subscribers in Great Britain entitled to Maps will obtain them by calling on our Agents, Messrs. ALGAR & STREET, 11 Clements Lane, Lombard st., London, who also have them for sale.

The pocket edition of our Railway Map may also be found at the office of Mr. Tros. M. Cash, No. 80 South 4th st., Philadelphia at the book store of Messrs. TAYLOR & MAUBY, Washington, D. C., and IDE & DUTTON, Boston.

## American Railroad Journal.

Saturday, April 21, 1855.

#### Ohio and Mississippi Railroad.

We gave last week a brief statement of the arrangement entered into between the Ohio and Mississippi, and the Indiana and Cincinnati railroads, by which the latter are enabled to extend their road into Cincinnati. The arrangement appears to be mutually and equally beneficial. Its object is to allow, what was designed to be *presented* by the adoption of the broad gauge,—the introduction of the cars of other roads upon the former. To effect this object, the Indianapolis and Cincinnati company put down a *third* rail at an expense of about \$100,000. On the Illinois division a third rail is being laid down for a distance of sixty miles, to accommodate the Illinois Central Railroad. If the business passing over the Ohio and Mississippi railroad is to be done on the narrow gauge, why not adapt the gauge of the road to the requirements of business, and not incur the enormous expense of a new superstructure? What a commentary are the above acts of the Ohio and Mississippi company upon their previous policy. We ask whether it would be better to take the money which it cost to put down the third rail, every cent of which might be saved by reducing the gauge, and apply it to the completion of this road? It will take 4,500 tons of iron to lay the third rail now going down. This iron on the ground is worth \$300,000. It will cost at least \$100,000 to lay it. *Four hundred thousand dollars* are thus being sacrificed to perpetuate one of the greatest follies ever perpetrated,—a folly the effect of which is to drive business away from the road, and which can only be recovered by supplying suitable accommodations for its transit. The action of the two companies for the purpose of accomplishing what the Ohio and Mississippi Railroad failed to do, would, we should think, open the eyes of the people of Cincinnati. They have been humbugged long enough by Mitchell and his associates. Whatever he does only results in mischief. We ask the company to explain why the Eastern division of the road is to cost more than Mitchell contracted the whole line for? Why has this cost gone in little more than a year from nine to some thirteen or fourteen millions? So long as the parties who are regarded as responsible for this increase, and for the profigate manner in which the affairs of the road ap-

pear to have been conducted, exert a potential voice in the management of their affairs, the company cannot expect to get any aid in this quarter. It would be neither safe nor creditable to help a road in the hands of such men. The sooner the company expunge the obnoxious persons, the better will it be for all parties. The past has been a dead failure, the future must be improved, or it will only repeat what has been.

#### Time-Table of Roads Running West from New York.

A convention of Presidents and Superintendents of Northern and Western railroads was recently held at Albany, for the purpose of arranging a time-table in which all the roads represented could unite. The one agreed upon included only the New York Central, Hudson River, Boston and Worcester and Western, Massachusetts, roads. Why no mention is made of the *Erie*, we are not informed, as we should suppose that it would have had a potential voice in the arrangement. We suppose it is expected that it will make the same time from New York to Buffalo as the Central, and Hudson River railroads.

The time allowed for the trip between New York and Buffalo, 450 miles, is 15 hours. This will require a running speed of nearly 35 miles the hour. It may have been thought necessary to adopt such speed to command the Western travel, but we do not think this to be the fact. We believe a speed of 25 miles the hour would have attracted just as many passengers, while the expense of running, according to the formula by which the cost of different degrees of speed are determined, is only about one half as great as at a speed of 35 miles to the hour. We had hoped that the two great roads, the Erie and Central, which monopolize a greater part of the Western travel, would have mutually agreed upon a time-table which, while it should have secured every facility to which the public might lay claim, would have reduced largely the expenditures of both companies. We can see no reason why these two companies should not act in entire harmony. By far the greater proportion of the business of each is strictly *local*. Both occupy commanding positions and should set an example of good management, and fair dealing both with the public and each other. Instead of *hostile* attitudes, we hope to see them acting in concert and harmony.

#### Baltimore and Ohio Railroad.

From a series of articles in the Baltimore *American*, on the Baltimore and Ohio Railroad question, we learn that the first subscription to the above work by the State was one made in 1826 for \$500,000, the city of Baltimore subscribing an equal amount at the same time. By an act passed in 1835, the State made a second subscription of \$3,000,000, the city also taking an equal amount. By the ninth section of this act, the State exacted a guarantee by which the stockholders were to agree and bind the company to pay to the State, after the expiration of three years from the payment by the State of each instalment on the subscription authorized by the Act, six per cent. per annum on the amount of money paid to the company. A separate and distinct subscription of \$500,000 was also made by the State to the Washington road. By several subsequent enactments, the right of the State to

appoint directors in the board was provided for. The interest on the \$3,000,000 loan has regularly been paid. Upon the subscription to the Washington Branch, she also receives a dividend and a capitation tax of at least 25 cents for each passenger, leaving only the original subscription of \$500,000 on which she does not receive interest. The State appoints one-third of the board of directors; viz. two for the first subscription, six for the second, and two for that to the Washington Branch. She is thus at the same time a preferred stockholder, while retaining a powerful influence in the direction. The city of Baltimore appoints eight members of the board. By the withdrawal of these, the *American* argues, the interests of the city would not only be unprovided for, but consequences the most injurious to her welfare would be likely to follow.

#### Lowmoor Iron.

The superior quality of this "make" of iron, has induced its large introduction into the manufacture of tires for locomotives, fire boxes, land and marine boilers, etc., especially those portions of boilers in which the plates have to be bent, flanged, or tortured into shape, and are exposed to the action of intense heat. It is also extensively used for the manufacture of rivets, axles for carriages, gun barrels, twisted augers and polished riding bits. It possesses great strength, and perhaps no other "make" can equal it in tenacity and durability when made into chains. Its quality is uniform, and it is unusually free from flaws and seams. Although this iron has been celebrated in Europe during the last century, it has but lately been introduced into the United States. We learn, however, that its reputation is rapidly increasing with us, among manufacturers of machinery of all sorts, and especially with locomotive builders, and railway companies for the manufacture and renewal of tires for passenger engines. The sales for this latter purpose alone are now said to number 10,000 tires annually. As now imported, the best of these tires are made with a *single weld*; though numerous sets are imported in the short bars, and welded here. The latter are generally considered less durable and more subject to flaws or other defects from a lack of uniformity in the heat when welding.

These works are situated in Yorkshire, England, and cover a space of ten acres of land. Some three thousand men are employed in their operation at an expense in wages of about \$19,500 per week, or \$1,014,000 per annum. From this fact, and that this iron has now become the favorite material among our best machinists for the purposes above named, together with the rapidly increasing demand for the Lowmoor tires of the *single weld*, we judge that it gives the utmost satisfaction to those parties who have tested its qualities.

We do not hesitate to commend it to the favorable notice of railway companies for renewals of their tires and for such other purposes, as they find it is best adapted to their necessities. Messrs. W. BAILEY LANG & Co., 54 Cliff st., New York, and 9 Liberty square, Boston, are the sole agents in this country. They will receive orders for such quantities as may suit their customers and will be found prompt and efficient in all their business transactions. A cut representing the Lowmoor

tire of the single weld may be seen accompanying their advertisement in another column of the JOURNAL.

#### East Tennessee and Georgia Railroad.

This road is a continuation South-westwardly of the East Tennessee and Virginia Railroad, extending from Knoxville, the terminus of the latter work, to Dalton in Georgia, where it connects with the Atlantic and Western Railroad of that State. Its entire length is 111 miles. The section of country traversed by it, resembles substantially that through which the Virginia and Tennessee, and the East Tennessee and Georgia roads pass; being one long valley, or a series of valleys, running parallel to the coast, between the Blue Ridge and the main Alleghany chain, and from 40 to 130 miles in width. The surface is gently undulating, and the soil very productive, yielding heavy crops of the different grains, but previous to the introduction of the railroad, so secluded, that the expense of transporting them to market precluded their exportation. In addition to the products of the soil, the mountain ranges contain extensive deposits of iron, copper, and lead ores, with an abundance of bituminous coal. The quality of the iron may be estimated, when it is stated that it was largely used in Pittsburg, where it commanded the highest price, to which place it had to be transported by water,—a distance of 2,500 miles. Numerous streams cross the valleys, furnishing abundant water-power for manufacturing purposes. At Charleston, 40 miles from Dalton, the road crosses the Hiwassee, a navigable stream for some miles above the bridge; and 42 miles further and 39 miles from Knoxville, it crosses the Tennessee river, at Loudon, by a bridge 1,694 feet long, and 77 feet above the water.—These are the principal obstacles of the kind presenting themselves on the route. The grades are favorable, there being none of these over 36 feet to the mile; while the shortest curves have a radius of nearly 3,000 feet. The gauge is 5 feet.—The road passes through a number of villages and towns, among the most important of which are Knoxville, Greenville, Athens, Charleston, Maryville, and Cleveland.

The act incorporating this company was passed in the Legislative session of 1835-6, empowering them, under the name of the Hiwassee Railroad Company, to construct a railroad from Knoxville, East Tenn., through the Hiwassee valley, to a point on the Southern boundary of the State, so as to intersect a railroad then contemplated to run from Augusta, Georgia, to Memphis. The capital stock of the company, divided into shares of \$100 each, was to consist of \$600,000 with the right to increase it to \$1,500,000. On the subscription of \$400,000, the company were authorized to commence operations. Should the latter sum not be subscribed by January 1st, 1838, the charter to become null and void. The road was required to be commenced by the beginning of 1838, and completed by the beginning of 1844—the latter clause being subsequently extended to 1860. The capital stock was forever exempted from taxation, and their property of all kinds for 20 years, from date of completion. Rates of fare were not to exceed six cents per mile for passengers, and ten cents per ton per mile for merchandise. Permission was granted, should the amount of stock subscribed be insufficient to construct the whole line,

to build the road from the State line to the Tennessee river only. By an act passed in 1838, for encouraging works of internal improvement, the Governor, on behalf of the State, was authorized to subscribe one-half the cost, or a sum not exceeding \$650,000, to the stock of the company,—payment to be made in State five per cent. bonds, running 30 years, and taken by the company at par. These were to be given by the State authorities in proportion as actual payments had been made by private stockholders. The Governor was required to nominate one-half the directors, or nine persons annually to represent the State interest. Permission was granted to construct turnpike bridges over the Hiwassee and Tennessee rivers, and exact ordinary rates of toll on the same.

Operations were commenced in 1838, and continued slowly for several years; but, owing to the failure of the State of Georgia to construct her works to the State line, and thus afford a connection for through business, this enterprise also failed at the time—not, however, until some \$900,000 had been spent in grading and bridging, principally on that part of the road south of the Tennessee river. Popular clamor had been aroused, and charges made that the funds had been extravagantly and wastefully applied. To remedy this, the Legislature passed an act in 1848, appointing commissioners to inspect the work and its valuation at the time, who after reporting to the Legislature, the latter body agreed, with the consent of the shareholders, to reduce the declared value of the work one-half, or \$450,000, the State and the individual stockholders losing equal amounts. By an amendment passed at the same time, the name of the company was changed to that of the "The East Tennessee and Georgia Railroad Company." Permission was granted to extend the road within the limits of Georgia to Dalton, subject to the consent of the Legislature of that State, which was shortly afterwards obtained. The stock of the new company was increased to \$2,000,000, and the time of completion extended to 1860.

In 1850, another amendment was passed, requiring the Governor to loan the credit of the State, for the purchase of the iron and machinery to the extent of \$850,000, for which six per cent coupon bonds, running 40 years were issued, that sold at a handsome premium.

Hon. A. P. Keyes, of Athens was elected the first President, and M. B. Pritchard of Mass., their Chief Engineer.

At the commencement of the new organization, there were 80 miles of the road graded in a superior manner, an excellent railroad and turnpike bridge erected over the Hiwassee river, and the timber for the cross-ties delivered on about 20 miles. A contract was shortly afterwards made with Gen. Green for grading the remainder, and furnishing and equipping the whole line. Under this energetic contractor, operations were now rapidly pushed forward. Increased subscriptions were made to the stock, and contracts made in England at reasonable rates, for iron sufficient to lay the track. The kind and size of rail adopted was the T. pattern, weighing 57 lbs. to the yard. In the early part of 1850, Gen. Green retired from his contract, by an arrangement mutually satisfactory to himself and the company. The latter as-

sumed the sub-contracts made by him; but shortly afterwards entered into a new engagement with other contractors.

The work of tracklaying was commenced in January, 1851, the rails having been delayed on the passage for some time on account of stress of weather.

The General Account of the company at this time stood thus:

Dr.	
To Stock reduced April 1st, 1848, to	\$454,831 00
Stock since paid in.....	310,690 33
State loan.....	350,000 00
Premium on do.....	14,000 00
Company's bonds.....	48,000 00
Company's stock due for iron and transportation.....	9,000 00
Other resources including balance	
State subscription.....	55,603 88
Amount required to be raised....	38,073 44
	\$1,280,198 65

Cr.	
By value of road as estimated by commissioners .....	454,831 00
By expenditure since April 1st, 1848 .....	282,739 02
By rails, locomotives, and cars purchased.....	418,600 00
By balance on contracts on work and materials, debts, &c.....	129,028 68
	\$1,280,198 65

The business of laying the track was rapidly prosecuted, during the following year. The contract for completing that part of the work, south of the Hiwassee river, was finished in September at a cost but slightly exceeding the estimates of the Chief Engineer. Early in the year, an arrangement had been made with another contracting party for grading, laying ties and track on that section between the Hiwassee and Tennessee rivers—payment to be made in the company's six per cent bonds, running 30 years. The extension of the road to Knoxville was strongly urged upon the stockholders at their annual meeting; and resolutions in favor of the immediate commencement of the work were adopted.

The road was opened for business to Fountain Hill,  $9\frac{1}{2}$  miles from Dalton on the 1st of March; to the State line, in April; to Cleveland in the latter part of June; to Charleston on the 1st of September; and to Athens on the 1st of December 1851.

The earnings of the road for the first year were—

From Freight.....	\$8,636 35
" Passengers.....	3,814 55
" Mails .....	749 60
	\$12,700 50

The ordinary expenditures for the same period amounted to about \$4,492 57, leaving as profits \$8,208 23, the greater part of which was expended on "extraordinary" charges. Serious difficulties were experienced from the Georgia connecting line being unable to forward freight, depriving the road, for several months in the business season, of a large amount of revenue. A number of locomotives and cars were received. Surveys were made on the remainder of the line, and the greater part let out to contractors, the route having been changed from that formerly laid down by the old company, effecting a saving in distance of three miles.

At the close of 1851, Mr. Keyes was succeeded

in the Presidential office by Mr. Thomas A. Callaway.

The earnings of the company for the eleven months ending November 30th, 1852, were \$57,926 54, of which the ordinary expenditure amounted to \$35,921 82.

The work was completed to Sweetwater on the 6th of April; to Philadelphia on the 10th of May; and to Loudon, on the Tennessee river, 82 miles from Dalton, in September of that year.

Buildings for repair shops and warehouses at Loudon were commenced.

An arrangement was entered into with a steamer for conveying freight and passengers between the terminus on the Tennessee river and Knoxville.

The cost of the work, at the close of 1852, was \$1,452,634 25 of which \$191,000 were covered by the company's bonds. The estimated amount required for extending to Knoxville was \$544,000. Of this all but \$48,000 had been subscribed by individuals along the line and by the State, the latter loaning the company \$340,000 on the same terms as before.

The earnings of the company for 1853 were \$93,975 13; and the expenses for the same time \$42,821 91, leaving as net profits \$54,653 22.—The cost of the work at date of the report for this year, had reached the sum of \$1,770,921 for which the company's liabilities were as follows:

Capital Stock, State.....	\$425,500 00
Do. Individuals.....	475,381 04
Bills payable.....	73,240 44
Transportation.....	105,765 00
State loan.....	370,000 00
Company's bonds.....	263,000 00
Scrip certificates.....	8,981 00
Due to individuals.....	49,053 76
	\$1,770,921 24

In September, Mr. Callaway being impelled by private interests to retire from the service of the company, resigned, and was succeeded in the Presidency by Mr. C. Wallace.

#### Notice of New Books.

CASES RELATING TO THE LAW OF RAILWAYS AND CANALS ADJUDGED IN THE (ENGLISH) COURTS OF LAW AND EQUITY, 1835-52. From the London edition, 6 vols., edited by Chauncey Smith and Samuel W. Bates. Boston, Little, Brown, & Co.

CASES RELATING TO THE LAW OF RAILWAYS ADJUDGED IN THE AMERICAN COURTS. Vol. 1, (same editors and publishers).

These two works form a very full and valuable library of the jurisprudence of railways. The "English railway cases" embodies all the English decisions on the subject since 1835, and an appendix to the first volume, gives all the cases decided prior to that date, which have any bearing upon American law. The "American railway cases" contains the entire body of decisions on the subject in this country. The two works include nearly one thousand cases. They will be, we believe, continued from time to time, as future decisions shall be accumulated. And they thus present in small compass, and at low expense, all that is authoritatively determined in the law, in respect to the numerous rights and liabilities which arise out of railway traffic in all its branches.

The editors and publishers of these works have certainly done good service to railway men in

these publications. We think that directors and officers in our companies will find them highly useful. A few leisure evenings resolutely devoted to the examination of the important cases, would give a man of common sense, practically familiar with the questions which arise in the management of companies, ideas on the subject of railway law which would be likely to serve him better than the off-hand advice of an average attorney.

#### **Journal of Railroad Law.**

#### **COMMON CARRIERS' LIABILITY. SPECIAL CONTRACT.**

Our readers will recollect a case reported in our last number as to the effect of a notice inserted in a bill of lading, limiting a common carrier's liability. In that case it was held that such a notice constituted a special contract between the parties and was sufficient to limit their liability. A case to a similar effect has recently been decided in England where a notice in a receipt given by a railroad company was held to limit their liability. We take the report of the case from the 25th volume of the English Law and Equity Reports.

#### **LIABILITY OF CORPORATIONS FOR INJURIES TO THEIR AGENTS. NEGLIGENCE OF AGENT. NEGLIGENCE OF CORPORATION.**

The rule of law is now to be considered as well settled that where different persons are employed by the same principal in a common enterprise, no action can be sustained by them against their employer on account of injuries sustained by one agent through the negligence of another. The following two recent cases explain this rule. The first affirms and shows the reasons of it. The second, a case arising in the Court of Appeals of this State, limits and defines it. In this latter case it is held not applicable where the injury results through the direct negligence or misfeasance of the principal; as where he had previous and sufficient notice of the defect through which the injury arose.

*Ryan vs. Cumberland Valley Railroad Company, Pennsylvania Supreme Court. Not yet reported.)*

Ryan was a day laborer on the Cumberland Valley railroad, and was employed with others in repairing the road. The laborers boarded in Chambersburg, about four miles from the place where they were at work, and they were accustomed to ride to and from their work in the dirt cars. One morning while thus going to their work the car which Ryan was in, which seems not to have been fastened, tipped up and threw him out upon the road. He sued the company to recover damages.

**LOWRY, J.** The nature of the case requires the admission that it was the understanding of the parties that the hands were to ride on the gravel train to and from their work, and the plaintiff is entitled to use this fact as a part of his case. He cannot, however, use it as presenting the whole of the relation between him and the defendants. He was not a mere passenger on the defendant's cars, because his travel upon them was really an incident of a different relation, that of a servant, and this is the character in which we must regard him here. He was no more a passenger than is the coachman, or wagoner, or carter, who is in the employment of another. He was simply a servant, with the privilege of riding, as part of his business, in the gravel train which was one of the in-

struments of his work. He could not and does not sue on a contract as a passenger, for that was not his relation; but he does sue on his true relation, as a servant injured by the carelessness of his fellow servants.

He seeks, however, to strengthen his position by the allegation and by evidence, that it was the duty of the engineer to see that all the cars were safely hooked before starting the train, and that his neglect in this respect is chargeable to the company. As a matter of fact this does not seem probable; yet we must examine its inference, as if it might be proved.

This alleged duty did not grow out of any contract between Ryan and the company, else the contract would have been charged as an essential and relevant bond of their relation, which has not been done. If it was a duty which the engineer owed to Ryan in any way, then the action ought to be against him for the breach of it. If he owed it to the defendants, then they alone can complain of its non-performance.

The duty must, therefore, be alleged as that of the defendants to Ryan. In what form shall we put it, or how shall we define it? Is it that, when persons are employed to work for others, the employers are bound to see that the instruments of their works are and shall continue in a condition to be used with safety? Then the coachman, the wagoner and the carter, who ought to know more about the vehicles which they use than their employers do, have a practical warranty that they are in good order, though practically we know that many of them are nearly worn out; the wood chopper and the grubber are insured that their axe or mattock shall not injure them by flying off the handle; the engineer, the miller, the cotton spinner and the wool carder have a guaranty for the accidents that may beset them in the use of the machinery which they profess to understand, and which they ought to understand so as to be able to inform their employers when it is out of order.

If this be so, then the care and skill required of workmen is reduced very much below what is ordinarily expected of them. If there be any distinction between any of these cases put and the one in hand it is too narrow to be made the foundation of a new rule, or to cancel the force of the analogy which they afford. Certainly, such a duty has never been considered as belonging to these relations, and, therefore, it cannot be law. The only way left for defining the supposed duty is to allege that employers are liable when any of those employed by them are injured by the carelessness of their fellow laborers. Though this proposition has never been decided upon by this Court, it has often been considered elsewhere, and decided in the negative; (1. McMullan, 385; 3. Cushing., 270; 4. Mal., 49; 5. Exch. R., 343; 6. Barb. (S. C.) R., 231; 15. Id., 574; 2. Richardson, 455; 3. Mees and W., 1; 5. Exch. R., 354; 6. Hill, 592; 6. Cushing., 74;) and we know but one case that seems to affirm it. (20. Ohio Rep., 415.)

The rule announced by these cases is that where several persons are employed to do the same general service, and one is injured from the carelessness of another, the employer is not responsible. On what principle can a contrary rule be founded? The maxim *sic utere tuo ut alienum non laedas*, does not apply; for that is the most general

of all rules, intended to define the duties of those who have no other relation than contiguity, and a common humanity. It is intended as the general rule defining the general relation of man in society, and not any of the special relations which must have their own rules. Our question is therefore reduced to this—what is there in the special relation of master and servant from which a contrary rule can be deduced?

With us this relation is always instituted by contract, and as we do not find that the duty which is now insisted on was made a part of the contract, we infer that it has no existence. But it must be conceded that many of the relations of life are instituted in the most general terms, and that the special duties of each party are so well understood in society that they are left entirely undefined in the contract, and each is presumed to have undertaken them, without their being formally specified. Certainly, no one will pretend that the duty here insisted upon has in this way become a part of this contract, for no one so understands it, and no one would so contract if requested.

There is, therefore, no way left but to allege that the law has made it a duty of a master to see that his servants do not injure each other by their carelessness. There is no statute of this purport, and, therefore, the allegation must be that it is a part of the common law. But the common law consists of the general customs of the people, and of the maxims and principles on which they act; and it is conclusive, against the rule contracted for, that it has never been found among these, and is not deducible from them. But the duty insisted upon is substantially one of protection which cannot exist without implying the correlative one of dependence or subjection.

There is no such relation of protection and dependence between master and servant, or of confidence in the institution of the relation; we speak not of master and apprentice. The servant is no Roman client or feudal villain with a lord to protect him. Both are equal before the law, and considered equally competent to take care of themselves, and very often the servant is the more intelligent of the two. The argument that the law implies a warranty that one servant shall not be injured by the carelessness of another is only another way of stating the proposition that the law imposes the duty of protection; and it must be set aside by the same answer. And what would be the value of such a rule? If it exists at all, it must grow out of the relation, and affect all persons standing in it; and this would change all our ideas concerning the relation of master and servant. Every man must have his own business, whether as master or servant, and there is no business without its risks. Where many servants are employed in the same business, the liability to injury from the carelessness of their fellows, is but an ordinary risk, against which the law furnishes no protection, but by an action against the actual wrong-doer. It would violate a law of nature if it should provide an immunity to any one against the ordinary dangers of his business, and it would be treating him as incapable of taking care of himself.

If we declare that workmen are warranted against such carelessness, then the law places all careless men, which means all badly educated or

badly trained men, and it places even those who have not acquired a reputation for care, under the bar at least of a partial exclusion from all work. And this is the ordinary result of all undue attempts to protect by law one class of citizens against another. It is done at a practical sacrifice of liberty on the part of those intended to be protected, and to the embarrassment of the common business of life, by imposing upon the people a rule of a new and unusual character, which may require half a century to become fitted like a custom, and adapted to the customs already existing which it does not have the effect of annulling. If this were the rule it would embarrass the conduct of all business, where any risk is to be run. How could a sailor be ordered aloft in a storm without the employers being liable to the charge that the captain had shown want of proper skill and care in such an order in such circumstances? How could the wearied laborer be allowed to ride home with the driver without danger that the employer should be called to account for an accidental tilting of the cart.

And such a rule could have very little application to great corporations, for they would immediately act on the maxim *conventio vincit legem*, and provide against it in their contracts. But it would live to embarrass the more private and customary relations, and be the source of abundant litigation.

Judgment was accordingly given for the defendants.

(Keegan vs. the Western Railroad Company, 4, Selden, 175.)

In December, 1845, the plaintiff was employed as fireman on the Western railroad. He was injured by the bursting of a boiler on one of the locomotives belonging to the company. Two months previous to the explosion the engineer had on five or six different occasions reported that the boiler was defective. These reports were entered on the books of the company kept for that purpose. The Supreme Court gave judgment for the plaintiffs for the sum of \$3,500 and the company appealed to the Court of Appeals. Upon this appeal the following decision was rendered,

RUGGLES, CH. J. The plaintiff was injured by the explosion of the boiler of a locomotive engine on which he was employed by the defendants as a fireman. The boiler was defective and dangerous, and its condition in this respect was and had for some time past been known to the defendants by the reports of the engineer made on five or six different occasions, which were entered on the books of the defendants kept for that purpose, and the injury to the plaintiff resulted from the improper conduct of the defendants in using the engine in question thus known to be defective.

On this statement of facts no doubt can be entertained of the liability of the defendants.

The cases referred to, in which it has been held that a principal is not liable to an agent or servant for an injury sustained by him in consequence of the misfeasance or negligence of another agent or servant of the same principal, while engaged in the same general business, are not applicable to the case now under consideration. They are applicable only where the injury complained of happened without any actual fault or misconduct of the principal, either in the act which caused the injury, or in the selection and employment of

the agent by whose fault it did happen. Whenever the injury results from the actual negligence or misfeasance of the principal he is liable as well in the case of one of his servants as in any other. But where the injury results from the actual fault of a competent and careful agent, (as may sometimes happen,) the fault will not be imputed to the principal when the injury falls upon another servant, as it will where it falls upon a third person; as for instance on a passenger on a railroad. In the case of a passenger the actual fault of the agent is imputed to the principal on the grounds of public policy; in the case of a servant it is not. In the present case the injury is found to have resulted directly from the negligence or misconduct of the defendants themselves in continuing to use an engine having a defective and dangerous boiler, after notice of its dangerous condition.

Judgment for plaintiff affirmed.

#### Railroad Earnings.

The earnings of the Erie Railroad for March have been made up, and are as annexed:

March, 1855.....	\$492,159 07
March, 1854.....	466,786 55

Increase in 1855.....\$25,372 52

The earnings for the past six months have been:

	1853-4.	1854-5.
October .....	\$589,675 18	\$589,018 70
November.....	461,266 15	488,818 61
December.....	381,203 40	454,431 00
January.....	337,232 56	427,886 00
February.....	342,525 32	357,629 11
March .....	466,786 55	492,159 07

Total.....\$2,528,688 96 \$2,759,392 49

Increase in 1855.....\$230,703 05

The March earnings of the Norwich and Worcester Road continue to show a decline as compared with the same month of last year:

	1854.	1855.
Through Travel.....	\$926 69	\$423 24
Local Travel.....	9,086 16	7,757 25
Freight.....	14,931 69	13,585 59
Miscellaneous.....	1,456 00	1,700 31

Total.....\$26,400 54 \$23,466 49

Decrease.....\$2,934 05

The receipts of the Covington and Lexington Railroad for the month of March were \$19,890. This was mainly from passengers, there being no surplus products in that part of Kentucky to export—the drouth of last year having cut off the crops. The receipts for April will probably reach \$22,000.

Receipts of the Frankfort and Lexington for three months ending March 31, 1855.

	JANUARY.	1854.
Freight.....	\$6,072 58	
Passage.....	9,490 60 15,564 18	\$17,012 02
	FEBRUARY.	
Freight.....	\$5,759 89	
Passage.....	7,063 82 12,823 21	\$17,753 82
	MARCH.	
Freight.....	\$9,051 54	
Passage.....	9,818 89 18,870 43	\$22,091 90
Total.....	\$47,257 82	\$56,861 83
Decrease in 1855.....	9,604 01	
	\$56,861 83	

#### GREAT WESTERN RAILROAD.

The earnings of the Great Western Railroad for

the week ending April 13th, were....\$52,573 16  
Corresponding week, 1854.....\$30,412 90

Increase.....\$22,160 26

#### LONG ISLAND RAILROAD.

The earnings of the Long Island Railroad, for the fiscal year ending 31st of March amounted to \$302,288. Showing an advance over the previous 12 months of over 20 per cent. or \$54,677.

The receipts of the Chicago and Mississippi Railroad for March were \$84,783.

The earnings of the Reading Road for March, are

	1854.	1855.
Received from Coal.....	\$303,485 57	\$187,722 32
Merchandise.....	32,697 51	19,482 28
Travel, &c.....	24,201 25	21,380 22

Total.....\$360,384 33 \$228,534 82

	Transportation, road-way, dumpage, renewal fund and all charges.....	Net profit for the m'th.	Net profit for previous three months.....	Total.
	\$165,260 55	\$135,688 69	286,000 42	195,428 53
			288,272 66	
Total net profits for four months.....	481,124 20			

The profits for four months, it will be seen, are in excess of last year, same time, \$198,000, or 67 per cent.

#### NEW YORK CENTRAL RAILROAD.

The following is a comparative statement of receipts from passengers and freight during the months of March, 1854 and 1855:

Passengers.	Freight.	Total.
1855.....\$218,362.17	\$302,309 37	\$520,671.54
1854..... 205,044.62	224,233.15	429,277.77

Increase...\$13,317.55 \$78,076.22 \$91,398.77

#### Locomotives in Cities.

This is a subject which we have, from time to time, brought to the attention of railway men through the *Journal*, and we consider it of sufficient importance to warrant its frequent discussion, until it shall be decided in favor of the admission of steam power in the place of horses.

It is the more appropriate just now, as within the last week there have been no less than two deaths caused in this city by the horse cars on our Avenue roads; a larger number than has been caused by the passage of locomotives in the same space and under like circumstances.

We observe in a New Orleans paper of recent date, that a new kind of fuel has been tried in that city, which is said to make steam without sparks or smoke. If such a discovery has been made, it will do away with the principal objection which has heretofore been urged to the running of engines in crowded thoroughfares.

In this connection we introduce the following remarks from the *Courier and Enquirer*, which we commend to the attention of our citizens.—The arguments adduced are conclusive and to the point. We hope, however, soon to be able to place before the public some official statistics, showing the relative cost of hauling passengers by horse, and steam power on our city roads. The Harlem, New Haven and Hudson River companies should be able to furnish these as well as the relative losses of life resulting from each.

The *Courier and Enquirer* says:

It appears to us, that if it had been designed to adopt means by which the passage of a train along the streets could be fraught with the greatest

amount of danger to pedestrians, those now practiced would have been selected. We doubt whether, if such were their object, they could be improved upon. Arriving at the limits beyond which locomotive power cannot come, the train is separated into as many different parts as there are cars composing it, and each car is drawn along the streets by four horses, the entire management of which, together with the duties of brakeman, are imposed upon one man. The horses are driven at a furious trot, along thoroughfares crowded with women and children. Each car, for all practical purposes, so far as life taking and limb maiming are concerned, is a train; and consequently, instead of the single train, efficiently manned, which passes through the suburbs, we have from six to ten, with a motive power not always subject to control, and but poorly provided with managing force. That the loss of life and limb is not greater than it is, is miraculous. How these dangers are to be avoided, without excluding the cars from the streets, is the subject of enquiry. To resort to the alternative of exclusion, would injuriously affect our relations with the north and northeast, and we believe our citizens will quietly submit to the danger and annoyance they now experience, some time longer, rather than urge such a measure.

Some time since, a locomotive, somewhat similar and no more objectionable in its general appearance than a baggage car, to which the epithet "dummy" was applied, was placed upon the Hudson River Railroad, for the purpose of superseding the use of horses, and bringing the trains into the city without uncoupling the cars. If we remember rightly, the management was of the opinion that the experiment would prove successful if persevered in. We are assured that eminent mechanics expressed entire confidence in its practicability. But the Directors felt, it was stated at the time, that they could not go on experimenting without some assurance from the municipal authorities that the locomotive would be permitted to traverse the public streets through which the cars are now drawn by horses, after its utility had been demonstrated. This desired assurance could not be had, and the whole enterprise was consequently abandoned. A disagreeable puffing of steam was caused by the engine, but if horses can get accustomed to din of drums and brass instruments, they might do so with respect to this noise of the steam.

Assuming, then, that the invention and use of a locomotive of the character of which the above is an imperfect outline, is practicable, without serious danger to person or property, its advantages are the next subject for consideration.—First, it would remove several hundred horses from our streets—an end the attainment of which is especially desirable at this time, when they are so crowded as to be almost impassable. In the second place it would result in a vast saving of expense to the companies and of time to the traveller—important facts in these times of low fares and high speeds. The cost of the horse power in use on a mile or two of the Harlem and Hudson River Railroads in this city, to each, is about one hundred thousand dollars annually, while the traveller is often incommoded by delays resulting from the same cause. Thirdly, and more important than any other consideration, the peril to life and limb would be decreased to a very decided extent. As we have said, now that the train is drawn into the city by horses, it is divided into as many detachments as it contains cars. Driven along at a high rate of speed, inefficiently manned, the cars cannot be stopped with facility. The distance between them as they pass along is sufficient to induce the pedestrian to attempt crossing the street with one close upon him—generally in great haste, when if he should be so unfortunate as to slip and fall, of which he is in imminent danger when the streets are muddy or icy, the risk to which he is subjected of being crushed by the cars or trampled under the feet of the horses, is a fearful one. It is plain, therefore, we think, that the use of a locomotive so constructed that

its fire and smoke, and much of its sound, would be imperceptible, and at the same time capable of drawing the whole train at once, would be far less objectionable than the continued repetition of the scenes now witnessed daily in the Bowery and Hudson and Canal streets. Would not the danger be lessened just as many times as there were cars in the train? Indeed, would not a locomotive be more easily managed than restive horses, and would it not strike more terror to the minds of reckless boys, who now tempt injury and death by passing under the very noses of the horses?

We have thrown out these considerations, in the hope that by attracting public attention to the subject, steps may be taken towards obviating an evil against which the public are muttering, not loudly but portentously, and which, although tolerated now, must before many years be lessened or entirely suppressed.

#### Virginia and Tennessee Railroad.

Our advertising columns of this date contain a prospectus of the Virginia and Tennessee Railroad Company, in which they invite proposals or bids for mortgage bonds of the company to the extent of one million of dollars. These bonds are dated July 1, 1854, with interest Coupons at the rate of six per cent. per annum, payable semi-annually at the Bank of America in this city, and the principal redeemable in the year 1884. The advantages secured to the capitalists in the purchase of these Bonds, are: The guarantee of the State of Virginia as a joint stockholder, 2d. A finished road to the extent of 135 miles, 3d. A bona fide capital paid in of three millions of dollars.

The country through which the Virginia and Tennessee Railroad is located embraces the counties of Montgomery, Pulaski, Wythe, Smythe, and Washington. In this region there are abundant deposits of Coal, Iron, Copper, Salt and Gypsum.

At the South Eastern terminus of the road, it forms a connection with the Tennessee and Virginia Railroad, which will thus complete a direct Railroad communication from Washington City via Lynchburg, Christiansburg, Abingdon in Virginia, and Knoxville and Rogersville in Tennessee, to the North Eastern corner of Georgia; thence by Railroad through Alabama to Mobile.

A glance at the map shows that when this continuous series of roads shall be finished, they will form the most direct route from Washington City to Mobile and New Orleans. But if, by unfortunate circumstances, the Southern line should not be completed, the local business on the Virginia road will alone secure to it an ample revenue.—Upwards of five millions of dollars have already been expended on the road, and the unfinished sixty-nine miles require an expenditure of only \$225,000 to complete them. There is no doubt entertained, however, of the speedy completion of the whole Southern line of the road through Southwestern Virginia, Eastern Tennessee, and from the extreme North to the extreme Southern point of Alabama.

The Virginia and Tennessee Railroad may be therefore, considered as a work fully accomplished and as an opening to the Central and Eastern parts of Virginia, abundant supplies of coal, lead, copper and other valuable minerals. The road is in good hands, and the State of Virginia itself holding three-fifths of the stock, is bound to maintain a careful insight into the management, business, and general results of the road.

We have been opposed to Mortgage Bonds issued by companies in anticipation of work and materials to be furnished or executed; but in cases like the present, where the road may be said to be in working order, with a large capital paid in, and the whole controlled by citizens of experience, ability and integrity, there can be no solid objection to the issue of Mortgage Bonds, especially when the statute requires, as now, the establishment of a Sinking Fund of one per cent., that will in thirty years liquidate the whole debt.—*Balt. Patriot.*

#### Vermont, Canada and Central Railroads.

The length of this important railroad line is 160 miles, representing an outlay of \$10,000,000, but only worth at the current prices for its securities \$2,600,000, as will be seen below, although the net earnings for the year ending in July last were equal to nearly six per cent. on \$5,000,000, namely: Earnings \$820,119 60, expenditures \$522,165 11, leaving the net income \$297,954 49, being within \$2,045 51 of six per cent. on \$5,000,000, without the advantages that will be derived in future from the trade with Canada West under the new reciprocity treaty, the coming business with the Prescott and Ottawa Railroad, the advanced tariff, the increase of local traffic, and a saving in the expenses, which has already begun. The line is furnished with many more cars and engines than formerly, and can therefore perform a greater amount of transportation, both of passengers and freight. The holders of the shares and bonds should reflect on these facts before they sacrifice their securities.

Cost of line.	Present value.
Canada shares.. 1,500,000 at 68.....	990,000
Central shares.. 5,000,000 at 6.....	300,000
First bonds.... 2,000,000 at 44.....	880,000
Second bonds... 1,500,000 at 22.....	330,000

\$10,000,000 \$2,500,000

Showing a liberal discount of 7,500,000, or 75 per cent.—*Boston Courier.*

#### Indianapolis and Bellefontaine Railroad.

This road is a prolongation of the Bellefontaine and Indiana Railroad, proceeding from the village of Union on the State line, to Indianapolis, and lying consequently within the limits of Indiana. It is 82½ miles in length, and divided into three general sections. The first of these begins at Indianapolis and extends to Pendleton, 29.4 miles, of which all but one mile consists of straight line. The highest grade is 30 feet to the mile for seven miles, the greater part of the remainder not exceeding 15 feet. The curvature is equally favorable. The principal streams crossed are Pogue's run, 30 feet wide; Indian creek, 70; Flat fork, 35; and Lick creek, 105 feet. The second division extends to Muncie, and is also 20.4 miles in length, four and a half of which are of the maximum grade of 30 feet to the mile, and about the same length is curved line, the shortest radius of curvature being 5730 feet. The largest streams crossed on this part of the route are Fall, Dilts, and Buck creeks, being respectively 200, 35, and 120 feet wide. The remainder of the line, from Muncie to Union, a distance of 29.97 miles, constitutes the third division. Of this less than one mile is curved line, seven and a half have an inclination of 30 feet per mile, nearly the whole of the balance being below 15 feet. The only stream of any magnitude is the White river which is crossed three times, requiring at one place a water-way of 200 feet.

On the greater part of the line, stone and timber were found in sufficient abundance for the construction and maintenance of the work.

The road was chartered in the Legislative session of 1847-8, with a capital of \$1,000,000, in twenty five dollar shares. The stock might be indefinitely increased. An election of directors might take place on a subscription of \$20,000 and payment of \$5,000; and surveys, location, and construction proceeded with, when \$30,000 were subscribed and \$10,000 paid in. The work was required to be commenced within five, and finished in twenty years. The directors were prohibited from putting under contract more than the amount sub-

scribed; but were subsequently permitted to borrow money. Profits were to be applied to the payment of debts, the managers having no right to declare dividends till these were all liquidated, and counties were authorized to subscribe, under certain restrictions. The Legislature reserved to the State the right to purchase the road, at any time after 60 years, by paying the cost of constructing and repairing the same, with 6 per cent. interest. By section 56th, the stock of the Pendleton and Indianapolis Railroad company which had been chartered in 1846, might be transferred to their books, if the latter company saw fit; otherwise the road was to commence at Pendleton, the terminus of the other company's line. This arrangement accordingly went into operation, the two interests having consolidated at an early date afterwards.

The company were organized in the beginning of July, 1848, Hon. O. H. Smith being their first President. The work of surveying and locating the line was shortly afterwards commenced, and in October ensuing, the clearing, grubbing, and bridging of the first section were let on favorable terms. Early in the following year, the managers issued \$20,000 of six per cent. bonds at five years, and \$30,000 of six per cent. payable at fifteen years from date. The first annual report showed that there had been subscribed to the road by 1820 persons 49,658 acres of land, valued at \$155,449, in cash \$90,425, in labor and materials \$33,425, making a total of 279,299. The estimated cost of the work, was as follows:

Grubbing, grading, and bridging.....	\$163,502 00
Iron.....	427,879 62
Laying track and ballasting.....	175,886 25
Buildings and rolling stock.....	230,000 00
Contingencies, 5 per cent.....	16,969 29

Total cost of road and equipment \$1,014,237 16—or an average cost per mile of \$12,253 68.

The above estimate contemplated right of way of 80 feet in width, substantial trestle bridges, and a T rail of 60 lbs. to the yard, with engines and cars of the most approved kind. The gauge was assumed at 4 feet 8½, being that usually adopted by the State.

The balance of the line was put under contract in 1849, while the grading and bridging of the first 28 miles were steadily progressing towards completion.

In the early part of 1850, the company issued six per cent. convertible bonds, payable in 1860 to the amount of \$250,000. These were secured by a first mortgage, the previous issue having been secured by real estate subscriptions.

The first section of the road was completed by the middle of October, and regularly opened on the 11th December of that year, at a cost of \$9,359 per mile, excluding machinery. The work on the remaining sections was progressing favorably, at the same time. According to the third annual report, published early that year, the amount of subscriptions had increased to \$480,153, about one-half of which had been made in real estate. Of these lands there were sold during the year to the value of \$38,173 at satisfactory rates. The amount received into the treasury from other sources was \$174,241, and the expenditure to date \$170,674.

The receipts of the first seven weeks after opening amounted to \$8,830 91; running expenditure

for the same time \$1,645 38; leaving as net earnings \$2,185 53, or over 5 per cent. per annum on cost.

A contract was made shortly afterwards with the Post Office authorities for carrying the U. S. mails.

The road was opened to Anderson, on the 26th of July, to Chesterfield, 42 miles, on the 9th of October following. No further advances were made in opening till the fall of 1852, when it was completed to Winchester, 74 miles from Indianapolis. The line was opened through to Union in January, 1853. Meanwhile the necessary buildings, equipment, &c., were proceeded with; the earnings continued steadily to increase, while the management of the road was conducted in a safe and satisfactory manner.

The last reports of this company not having yet come to hand, we have been obliged to leave the above unfinished for the present.

#### Railroad Map of the United States for the World's Fair.

The necessity felt for a map of the United States and their territories, on a scale of sufficient magnitude to display distinctly whatever a good map should contain, induced the American Geographical and Statistical Society to undertake, about a year since, the construction of the one, which now graces the walls of the society's room. The scale is 6 inches to the degree. The map extends from ocean to ocean, and from the southern shore of Lake Winnipeg to the mouth of the Rio Grande del Norte. Its length East and West is about 30, and from North to South, 15 feet. Its grand aim was to display the vast system of railroads which now cover the Eastern States, and Canada, and which, from the size of the map, is completely attained. The value of this map is so universally acknowledged, that it was thought by the society, that they could not better accomplish the objects of the organization, than to have it thoroughly corrected, and a copy made; first for exhibition at the world's fair which is soon to open in Paris; then to be permanently deposited, probably, in the Stock Exchange, London. For this purpose, at a late meeting of the society, a committee, consisting of Rev. Dr. Francis L. Hawks, Archibald Russell, Henry E. Pierrepont, Edmund Blunt and Henry V. Poor, were appointed to collect suitable materials, and superintend their compilation. The committee hold weekly meetings, and have collected a large amount of information not possessed when the first map was constructed. The new work is already well advanced, and the committee hope to have it completed

early in July.

The expense of the first map was borne by a few members of the society. For the cost of the copy, the Editor of the JOURNAL agreed to become responsible, looking to the railroads for the needful.

As the work in which the society are engaged cannot fail to be of very great pecuniary value to all our railroad companies in correctly determining the lines of their roads and the connections and relations which they sustain, on a magnificent scale, the writer hopes that the small requisition he may make upon the companies for the aforesaid purpose, will be promptly responded to. He is happy to state that so far as railroad companies have been applied to, they warmly encourage, and freely aid the proposed work.

#### East Tennessee and Georgia Railroad.

"We are gratified to be able to state that the cars on the East Tennessee and Georgia Railroad are now running to Lenoir's, six miles this side of Loudon, and the same distance on this of the Tennessee river. The heavily and richly freighted trains now pass the magnificent bridge, which now spans the noble Tennessee at Loudon. This bridge as a work of art is pronounced by common consent equal, if not superior to any bridge in the entire South. It is indeed a magnificent monument to the Southern enterprise, energy and utility. The Iron Horse is now within twenty-two miles of Knoxville, and in a very few months, we hope to give him such a welcome at this, the grand junction of four of the principal railways of the Union."

#### Sale of Iron Works.

The Baltimore Sun states that Brady's Iron Works, in Pennsylvania, have been sold to a Boston company for \$490,000, there being included in the sale several thousand acres of land, containing extensive ore and coal beds, with ore and coal privileges on adjoining lands, four blast furnaces, a large bar-iron and railroad iron rolling mill, about 200 dwelling-houses, warehouses, storehouses, hotel, &c.; a stock of ore, coal, pig metal, merchandise and implements of trade, valued at \$80,000; 5,000 tons of finished railroad iron, together with Western Railroad Company Bonds to the amount of \$100,000.

#### Extension of the Lake Shore Railroad.

The citizens of Manitowoc held a spirited meeting on the 14th inst., on the subject of extending the Lake Shore Road to some point in that country. After taking a sensible view of the importance of the work as tending to enhance the value of property along the line, and to give an impulse to all the interests of the people, a resolution was adopted that it was expedient for the County of Manitowoc to "loan its credit to the company in the sum of \$300,000, if such sum be found necessary to accomplish the end proposed, provided said company give the county satisfactory security for the payment of the interest and principal of said loan as the same may fall due."

A committee was appointed to confer with the officers of the company as to the security they would offer for the bonds proposed to be issued.

#### BACK VOLUMES AND NUMBERS

Of the Journal may be obtained on application by letter or otherwise.

All remittances may be made in Bank Bills, current in the State from which they are sent, by Mail, at the risk of the publishers.

#### Railroad Iron.

3,500 TONS ENGLISH RAILS, 58 lbs., of CRAWSHAY & GUEST's make in port and to arrive within sixty days. For sale by  
616 THEODORE DEHON, 10 Wall st., near Broadway.

#### M. W. BALDWIN & CO., Engineers, BROAD AND HAMILTON STREETS, Philadelphia,

WOULD call the attention of Railroad Managers, and those interested in Railroad Property, to their SYSTEM OF LOCOMOTIVE ENGINES in which they are adapted to the particular uses for which they may be required; by the use of one, two, three or four pair of driving wheels; and the use of the whole, or so much of the weight as may be desirable for adhesion; and in accommodating them to the grades, curves, strength of superstructure and rail and work to be done.—By these means the maximum useful effect of the power is secured with the least expense for attendance, cost of fuel and repairs to Road and Engine. With these objects in view and as the result of twenty-three years practical experience in the business by our senior Partner we manufacture FIVE different kinds of Engines and several classes or sizes of each kind.

Particular attention paid to the strength of the machine in the plan and workmanship of all the details. Our long experience and opportunities of obtaining information, enables us to offer these engines with the assurance that in efficiency, economy and durability they will compare favorably with those of any other kind in use.

We also furnish to order, Wheels, Axles, Bowline Tire (to fit centres without boring), Composition Castings for Bearings; every description of Copper Sheet Iron and Boiler work; and every article appertaining to the repair or renewal of Locomotives.

M. W. BALDWIN,

MATTHEW BAIRD.

**To Land Claimants in Texas.**

If you have any business in relation to Lands in Texas address  
I. W. B. Strotz, Clarksville, Red River County, Texas, and it  
will be attended to promptly.

929 79.) as being sufficient of itself to support  
the road. It passes almost its whole length  
through a region abounding with a variety of min-  
erals of the most valuable nature, such as lead,  
coal, iron, copper, salt and gypsum, all of which  
exist in great abundance, which have been hith-  
erto neglected, but which are fast being developed,  
now that they can be conveyed to market. In  
short, the prospects of the road are most flattering,  
and fostered as it has been by the State, and  
supported generally by the people of Virginia,  
with so large a cash capital actually paid in, it is  
believed no security has been recently offered of  
a better character. The Company have agreed  
to set apart one per cent. annually on the amount  
of their Bonds from the earnings of the road, as a  
Sinking Fund to meet the payment of them at  
maturity; and the stockholders have adopted as  
a line of policy, to declare no dividend excepting  
from a cash surplus, after the interest and Sinking  
Fund have been provided for.

The terms on which the sale will be made are  
25 per cent. down, and the balance in payments  
of 10 per cent. every thirty days till all paid. If  
the whole amount is paid at once, interest to 1st  
of July to be allowed. The right of rejecting all  
or any part of the bids is reserved, if deemed for  
the interests of the Company to do so. The bonds  
will be lodged in bank to be delivered when the  
whole amount is paid. Full information will be  
given on all subjects connected with the financial  
affairs of the Company which could be derived by  
parties wishing to offer for the bonds, and docu-  
ments and references obtained by applying to  
ADRIAN H. MULLER, Esq., No. 38 Wall st.,  
New York, to whom offers must be sent, sealed  
and marked "Tender for Railroad Bonds," on or  
before the 24th day of May next.

JOHN ROBIN McDANIEL, *Prest.*

Virginia and Tennessee Railroad Co.

The Board of Directors are:

HENRY DAVIS, GEORGE STUART,  
THOMAS L. PRESTON, WILLIAM A. READ,  
WILLIAM T. ANDERSON,  
and C. F. M. GARRETT, *is Chief Engineer.*

I will receive sealed proposals for the above  
loan, which will remain with me unopened till 3  
o'clock P. M., of Thursday the 24th day of May  
next, to be then opened in the presence of the  
President or some other authorized agent of the  
Company.

ADRIAN H. MULLER, No. 38 Wall st.  
New York, April 6, 1855.

OFFICE OF WATER WORKS,  
Detroit, April 24, 1855.

THE BOARD OF WATER COMMISSIONERS of the city  
of Detroit, pursuant to an act of the Legislature of the  
State of Michigan, will receive Sealed Proposals until the  
seventh day of June next, at 12 o'clock, A.M., for a loan upon  
the credit of the city of Detroit, for the sum of Two Hundred  
and Fifty Thousand Dollars, and upon bonds, as follows: Fifty  
thousand dollars, payable in twenty-five years; one hundred  
thousand dollars, payable in thirty years, and one hundred  
thousand dollars, payable in thirty-five years, with interest, at  
seven per cent. per annum, payable semi-annually. The principal  
and interest payable in the city of New York.

No proposal will be received for a less rate than the par value  
of such Bonds.

Proposals to be directed to the "President of the Board of  
Water Commissioners of the city of Detroit," and endorsed  
"Proposals for Loan."

EDMUND A. BRUSH,  
SHUBAL CONANT,  
HENRY LEDYARD,  
JAMES A. VAN DYKE,  
WILLIAM B. NOYES,  
*Commissioners.*

2m15

BY the Baltimore and Ohio Railroad Company, 24 crate cars  
adapted to railroad purpose, which will be sold at a rea-  
sonable price. For further information, apply to

SAMUEL J. HAYES,  
M. of M., Baltimore and Ohio R. R. Co.,  
or, BRIDGES & BRO.,  
64 Courtland st., New York.

19 ft

**For Sale.**

WANTED, STUDENT ENGINEERING, SURVEY-  
ING and DRAUGHTING.—Four or five active  
young men of intelligence, clever habits, and good education,  
who may desire to perfect a course of studies and gain a  
knowledge of the above pursuits, may find an instructor and  
employer by addressing, in their own hand, with references,  
Box 177, Cumberland, Maryland.

Terms: First year, tuition in the office and field, use of instru-  
ments and scientific library, with \$40 pay for services;  
second year, advance in pay.

**Notice to Contractors.**

OFFICE OF THE ALA. & FLA. R. R. CO. OF FLORIDA.

Pensacola, Florida, Feb'y 21st, 1855.

PROPOSALS for Grading, Masonry and Bridg-  
ing of 46 miles of this road will be received  
at the office of the Company until 1 o'clock P. M.  
on the 1st day of May next.

Maps, profiles, plans and specifications of the  
work will be ready for inspection on and after the  
1st of March.

The Alabama and Florida Railroad is designed  
to extend from the city and harbor of Pensacola  
to the city of Montgomery, in Alabama. Propo-  
sals are now invited for the portion of this road  
which lies in the State of Florida.

Proposals will be received for the work in sec-  
tions of ten miles each, or for the whole road.—  
The work to be completed within 18 months from  
the date of the contract.

The terms of payment will be two-thirds cash,  
and one-third in Bonds of the City of Pensacola,  
or Stock of the Company, and proposals will be  
received for a larger proportion of Bonds or Stock.

The work is generally of a light order, though  
with some heavy earth cutting and several pile  
bridges. Every facility exists for prosecuting the  
work advantageously at all seasons of the year.—  
The country is elevated, rolling, well wooded and  
watered and healthy.

Any further information desired by persons  
wishing to offer proposals for the work will be fur-  
nished at the office, or may be had by addressing  
the President of the Company prior to the day of  
letting.

By order of the Board of Directors,  
4t18 WALKER ANDERSON, *President.*

**To Contractors.**

SEALED PROPOSAL will be received at the  
Office of the BARCLAY R. R. & COAL COM-  
PANY in Towanda, Bradford County, Pa., until  
Saturday, the 14th of April next, for the gradu-  
ation, masonry, bridging, cross ties, &c., of about  
16 miles of railroad, extending from Towanda to  
the mines.

Plans, specifications and profiles will be exhibited  
for three days previous to the day of letting.

The work will be allotted either in separate  
sections of about one mile each, or the whole in a  
single contract, as shall be determined after the  
bids are opened. THOS. T. WIERNAN,

March 24th, 1855. 2t18 Eng'.

THE undersigned propose to change the location of their  
business, and invite the attention of those interests to  
which it may be an object of importance to induce the estab-  
lishment of a manufactory of locomotive engines and cars on  
an extensive scale.

J. PERKINS. ALEXANDRIA, March 29th, 1855.

R. C. SMITH. 124t

Benjamin Watkins,  
Architect, Engineer, and Suspension and Railroad Bridge  
Builder, Port Gibson, Miss.

CHILLED WHEELS,  
FOR  
RAILROAD CARS & LOCOMOTIVE ENGINES.

Bush & Lobdell,  
WILMINGTON, DELAWARE.

ARE prepared to execute promptly orders to any extent,  
for their celebrated Wheels, (with or without axles,) the  
character of which is well known.

Schenectady Locomotive Works,  
SCHEECTADY, N. Y.

THESE Works having been enlarged and improved, and  
having made extensive additions to their tools and ma-  
chinery, are prepared to receive and execute orders for  
LOCOMOTIVE ENGINES AND TENDERS,  
and RAILROAD MACHINERY generally, with the utmost  
promptness and dispatch and in the best style.

The above works being located on the New York Central  
Railroad near the centre of the State, possess superior facilities  
for forwarding their work to any part of the country without  
delay.

JOHN ELLIS, Agent.  
March 22d, 1855. WALTER MCQUADE, Secy. 116t

**To Engineers and Architects.**

A ENGINEER who has been engaged upon a prominent railroad in the State of New York, for the past six years, as principal draughtsman, and is experienced in architectural as well as topographical drawing, is desirous of forming a new engagement. The best of reference given.

Address Engineer Am. R. R. Journal.

11.8t

**New Works on Civil Engineering.**

THE Field Practice of laying out Circular Curves for Railroads.—By JOHN C. TRAUTWINE, Civil Engineer—3d edition in pocket-book form.

A new and rapid method of Calculating the Cubic Contents of Excavations and Embankments, by the aid of Diagrams.—By John C. Trautwine, Civil Engineer—2d edition with 10 Copper Plates.

Price One Dollar each—postage on the Curves Three Cents—and on the Excavation and Embankments, Six Cents.

For sale by WILLIAM HAMILTON,  
Hall of the Franklin Institute,  
January 18, 1854. Philadelphia.

11.8t

**4,000 Tons Railroad Iron.**

WANTED.—The undersigned invites proposals for the supply of about 4,000 tons of T or U pattern railroad iron weighing not less than sixty lbs to the yard, for completing "the Buffalo, Corning and New York Railroad" from Batavia to Buffalo. Proposals desired immediately for delivery in June next at New York, Corning or Buffalo as may best suit the convenience of parties proposing. CHAS. G. MILLER,  
Pres't B. C. & N. Y. R. R. Co.  
BUFFALO, Feb'y 15th, 1855.

11.8t

D. C. McCALLUM, General Sup't.

**Notice to Contractors.**

IMPROVEMENT OF THE DES MOINES RIVER NAVIGATION—OFFICE OF THE DES MOINES NAVIGATION AND RAILROAD COMPANY, 18 William street, New York, Feb. 24, 1855.

SEALED PROPOSALS will be received at the office of the Chief Engineer of this Company, at Keokuk, Iowa, until the first day of May next, at 10 o'clock in the forenoon, for the construction of the LOCKS, DAMS, and works connected therewith, between St. Francisville and Ottumwa, a distance of 78 miles.

This work consists of seven new locks and dams, and the enlargement and completion of five other locks and dams. The locks are to be 200 feet long and 45 feet wide, in the chamber, and to be built of hydraulic masonry, with cut stone face, and massive coursed rubble backing.

The dams will average about 700 feet in length, and 11 feet lift, and will be composed of timber cribs filled with stone.

The locks and dams will rest on a rock foundation.

The work will be ready for examination by the 10th day of April next, at which time plans and specifications will be exhibited, and blank proposals will be furnished at the offices in New York and Keokuk.

Monthly payments will be made to the contractors, in cash, to within fifteen per cent of the relative estimates of the Engineer.

The company reserve the right to reject any proposal which is not satisfactory.

Any further information that may be desired, may be obtained of the President and Chief Engineer, and at the offices in New York and Keokuk.

The work between St. Francisville and the mouth of the river, near Keokuk, will be offered for letting at an early day.

ORVILLE CLARK, President.  
E. R. BLACKWELL,  
Chief Engineer.

**Notice to Contractors.**

American and Foreign

EMIGRANT PROTECTIVE AND EMPLOYMENT SOCIETY,  
27 Greenwich st., Feb. 14th, 1855.

CONTRACTORS on Public Works and on Railroads are respectfully invited to make application at the Society's Office for Laborers for their Works. In doing so, we believe they will promote their own advantage, as well as advance the interests of the Society. Arrangements have been made in Europe, by which Emigrants of the best character will be consigned to the Society's care; and the manner in which business is transacted at their Office, guarding as it does the interests of the employer as well as promoting the good of emigrants will be highly satisfactory. The necessity of men of character standing between the employer and employee, is sufficiently felt; and this object will be secured by engaging the services of the Society in procuring Laborers.

Application in person to the Superintendent, Mr. J. SEYMOUR, 27 Greenwich st., or by letter, post-paid, to the General Agent, Rev. D. R. THOMASON, Society Rooms, 18, Astor Place, will have prompt attention.

10.1t

**New York and Erie R. R.**

On and after Thursday, March 29th, and until further notice  
PASSENGER TRAINS  


will leave Pier foot of Duane street,

as follows, viz:—

DUNKIRK EXPRESS, at 7 a.m. for Dunkirk.  
BUFFALO EXPRESS, at 7 a.m., for Buffalo.

MAIL, at 8 1/2 a.m. for Dunkirk and Buffalo, and intermediate stations.—Passengers by this train will connect with Express trains for Syracuse, Cayuga, Canandaigua, Niagara Falls, and Rochester, and with the Lightning Express Train on Lake Shore Railroad for Cincinnati, Chicago, &c.

ROCKLAND PASSENGER, at 3 p.m., (from foot of Chambers st.) via Poughkeepsie for Suffern's and intermediate stations.

WAY PASSENGER, at 4 p.m., for Newburgh and Otisville, and intermediate stations.

NIGHT EXPRESS, at 5 p.m. for Dunkirk and Buffalo.

EMIGRANT, at 5 1/2 p.m., for Dunkirk and Buffalo and intermediate stations.

Sundays only one Express Train—at 5 p.m.

These Express Trains connect at Elmira, with the Elmira & Niagara Falls Railroad, for Niagara Falls, at Buffalo and Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Toledo, Detroit, Chicago, etc.

11.1t

MORRIS & TANNER.

OFFICE MASTER OF ROAD BALT. & OHIO R. R. CO.

**H. SCHLARBAUM,**

290 Broadway corner Reade st.

SURVEYORS' LEVELS, COMPASSES and other Mathematical Instruments made with great care and for sale at low prices. Repairs done in the best manner.

14tf

**To Railroad Companies, Bridge Builders, Merchants and Machinists.**

THE undersigned continue to manufacture at the Tredegar Iron Works, Richmond, Va., Bar Iron of every description, Railroad Chairs and Spikes, Car and Locomotive Axles, &c., &c., and solicit a call from those in want of such articles, before they make their purchases.

Our iron has been used very extensively for the last 18 years in the construction of Government work, Railroad Fastenings, Bridge Bolts and other Bridge work; and has given universal satisfaction.

On this point we give a copy of a letter received from one well qualified to give an opinion on the subject, having a very large experience.

MORRIS & TANNER.

OFFICE MASTER OF ROAD BALT. & OHIO R. R. CO.

Baltimore, March 9th, 1855.

Messrs. Morris & Tanner, Tredegar Iron Works,

Richmond, Va.

I take great pleasure in recommending the Bar Iron manufactured at your establishment to all who are in want of a superior article. I have used it in the construction of Iron Bridges, and also for Chairs and Fastenings for Track and feel free to say that for strength and finish it compares favorably with the best manufactured American Iron.

3m14

W. BOLLMAN. Master of Road.

**\$800,000**

**TOLEDO and ILLINOIS,  
AND  
Lake Erie, Wabash & St. Louis  
RAILROAD CO.'S****FIRST MORTGAGE BONDS.**

\$800,000 OF THE BONDS OF THE LAKE ERIE, WABASH & ST. LOUIS and TOLEDO & ILLINOIS RAILROAD COMPANIES are now offered for sale, being the unsold balance of their SEVEN PER CENT. FIRST MORTGAGE BONDS.

These Bonds are part of a series of \$3,400,000 issued by the two Companies on 243 miles of road extending from Toledo, at the head of Lake Erie, in the direction of St. Louis, and following the Maumee and Wabash Rivers to the State line of Illinois, from which points communication will soon be had with St. Louis by the Terre Haute and Alton Railroad, and with Springfield, the capital of Illinois, and with the terminus of the Hannibal and St. Joseph Railroad on the Mississippi River, by the Great Western Railroad of Illinois, now far advanced towards completion.

The Bonds are payable on the 1st day of August, 1865, with interest payable semi-annually in New York, and are convertible into the capital stock of the Companies, within six years from the 1st of August, 1853.

The cost of the roads, when completed, will be \$7,000,000, not exceeding \$30,000 per mile, for a road built and equipped in the most thorough and superior manner. Of this \$5,000,000 have already been expended on the roads, and the Companies are free from floating debt, and have the means on hand to complete 120 miles of road, which will be opened for use during the month of June next.

This sum has been raised by the sale of Stock and First Mortgage Bonds, and \$1,000,000 of Second Mortgage Bonds, leaving undisposed of in the hands of the Treasurer, \$1,000,000 of the Second Mortgage Bonds, and \$800,000 of the First Mortgage Bonds, amply sufficient to complete and equip the line.

Without reference to the through business which this line must command, as the shortest route from St. Louis and Springfield to Lake Erie, it is universally conceded that it will possess the largest local business of any line west of Buffalo. The valley of the Wabash has always been known as the richest portion of Indiana, and the county seats through all of which the line passes are the most populous towns to the State.

ALBERT S. WHITE, President.  
14.8 EDWARD WHITEHOUSE, Treasurer.  
WARREN COLBURN, Chief Engineer.  
Apply to CAMMANN & CO., 56 Wall street.

**American Railroad Iron.**

4,000 TONS T pattern about 60 lbs. per linear yard, now manufactured and ready for delivery at Pittsburgh on the Ohio river. Apply to

THEODORE DEHON, 10 Wall st., near Broadway.

NEW YORK, March 12th, 1855.

11.5t

Manufactures

Rosendale Cement.

We are prepared to enter into arrangements for supplying our cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, setting immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, on application at their office, by

OGDEN & DELAFIELD, 104 Wall st.

The above cement is used in most of the fortifications building government

17

**AUBURN STEAM FORGE,**

AUBURN, N. Y.—CHAS. RICHARDSON, Proprietor.

Manufactures

**Car and Locomotive Axles,**

STEAMBOAT AND MILL SHAFTS,  
CRANKS, CRANK PINS, CONNECTING RODS,  
Wagon Axles, Pick Axes, Crow Bars, &c., &c.,  
of the best assorted Scrap Iron, and WARRANTED. [10.]

**REMOVAL.**

CLARK & JESUP have removed their place of business to No. 70 Beaver st.

9.4t

11.1t

**BUFFALO CAR COMPANY.**

THIS Company having now completed their extensive Car Works are filling orders for the construction of PASSENGER, BOX, BAGGAGE, PLATFORM and CATTLE CARS of the most approved style and finish. The works have connections with the various lines of railway east and west, which gives them all required facilities for the delivery of cars in every direction.

Orders are respectfully solicited, address to the

BUFFALO CAR COMPANY,

Office 37 Pearl st., Buffalo, N. Y.

LOWELL MAIL

10.1t

11.1t

11.1t</